Service Manual

HP Designjet 9000s Series Printers

invent

For HP Internal Use Only

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First Edition, March 2006

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WARNING

The procedures described in this manual are to be performed by HP-qualified service personnel only.

Electrical Shock Hazard

Serious shock hazard leading to death or injury may result if you do not take the following precautions:

- Ensure that the ac power outlet (mains) has a protective earth (ground) terminal.

- Disconnect the Printer from the power source prior to performing any maintenance.

- Prevent water or any other liquids from running onto electrical components or circuits, or through openings in the enclosure.

Electrostatic Discharge

Refer to the beginning of Chapter 4of this manual, for precautions you should take to prevent damage to the Printer circuits from electrostatic discharge.

Safety Symbols

General definitions of safety symbols are given immediately after the table of contents.

WARNING

The Warning symbol calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a Warning symbol until the indicated conditions are fully understood and met.

CAUTION

The Caution symbol calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a Caution symbol until the indicated conditions are fully understood and met.

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Service Manual

HP Designjet 9000s Series Printers

Using this Manual

Purpose

This Service Manual contains information necessary to test, calibrate and service:

- HP Designjet 9000s Series Printers (Model Q6665A).

For information about using these printers, refer to the corresponding User and Quick Reference Guides.

Readership

The procedures described in this Service Manual are to be performed by HP Certified service personnel only.

Part Numbers

Part Numbers for Printer options, accessories and service parts are located in Chapter 7.

Conventions

A small arrow ⇒ is used to indicate other parts of the Service Manual where you can find information related to the topic you are consulting.

Safety Precautions

The following Warnings and Cautions are presented in this Service Manual and must be observed.

Follow the instructions marked with these symbols.

⚠ WARNING	Failure to follow the guidelines marked with this symbol could result in severe personal injury or death.
⚠ CAUTION	Failure to follow the guidelines marked with this symbol could result in minor personal injury or product and/or peripheral damage.

⚠ WARNING

	Inks used in the printer and liquids in the HP Cleaning and Maintenance kits contain an organic solvent (ethylene glycol monobutyl ether acetate, CAS No. 112-07-2). Observe all local, state, and federal regulations related to the handling, use, storage, and disposal of organic solvents.
	Avoid contact between ink and skin, eyes, and clothing. ■ Immediately wash skin with soapy water. ■ Remove clothing soaked with ink from contact with skin. ■ Use an approved eye wash station if ink is splashed into eyes and consult a doctor if necessary. ■ If an approved eye wash station is unavailable, flush eyes with cold water and consult a doctor if necessary.
	Be sure the printer is well-grounded. Failure to ground the printer may result in electrical shock, fire, and susceptibility to electromagnetic interference.
	Ink and fluids used in the Cleaning and Maintenance Kits are combustible. Do not use or store within 8 meters (25 feet) of open flames, sparks, or other sources of ignition.
	Switch power OFF, remove the power cords from the electric outlets and allow the printer to cool before attempting to remove any panels or covers. The printer contains high voltage and hot components. Removal of panels or covers may result in exposure to electric shock and burns.
	Do not allow metal or liquids (except those used in HP Cleaning and Maintenance Kits) to touch the internal parts of the printer. Doing so may cause fire, electric shock, or other serious hazards.
	When shutting down the entire system, always turn OFF the printer switch as well as the heater switch (breaker).
	Use only an HP Waste Ink Bottle. The bottle must be installed according to instructions or waste ink may overflow.
	An HP Waste Ink Bottle must always be installed before turning the printer ON. Automatic and manual service cycles produce waste ink that must be contained in an HP Waste Ink Bottle.
	Always use both hands to remove and carry an HP Waste Ink Bottle.
	Keep the HP Waste Ink Bottle upright. Do not place on tables or shelves where it could fall.

	Waste ink is combustible. Keep an HP Waste Ink Bottle containing waste ink away from open flames, sparks, or other sources of ignition.
	Never store waste ink in a glass container.
	Never pour waste ink into a container filled with other chemicals.
	The HP Waste Ink Bottle contains organic solvents and must be disposed of in compliance with all local, state, and federal regulations.
	Always securely replace the cap on a full or partially-full the HP Waste Ink Bottle after removing it from the printer to prevent ink spills.

⚠ CAUTION

	Treat any media, paper, used cleaning and maintenance supplies, and wipes soaked with ink as combustible materials. Handle and dispose of properly.
	Do not clean the printer with benzene or paint thinner. This may damage the paint.
	Wipe the printer clean with a soft cloth. A cloth moistened with a neutral detergent may be used. Do not allow liquid to enter the printer. This may create risk of fire and electrical shock and cause a malfunction.
	Never touch the printhead nozzles. They can be easily damaged or clogged.
	Do not touch heater surfaces in the paper path. This may cause burns. Take care when touching printer components near the heaters.
	HP Ink Cartridges must be installed before the "Install By" printed on the cartridge. Use of the Ink Cartridge 3 months beyond the "Install By" date may cause deterioration in print quality or a printer malfunction.
	Do not separate the cap from a new HP Waste Ink Bottle. The cap is needed to properly seal the HP Waste Ink Bottle for disposal.
	The level in the HP Waste Ink Bottle should be checked by visual inspection to prevent overflow. If the waste ink level is above the indication line, the bottle must be replaced with an empty HP Waste Ink Bottle.
	The use of safety glasses and gloves is recommended when performing cleaning and maintenance operations.

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Guide to Troubleshooting the Printer

Introduction

This chapter will guide you through the relevant steps to take when troubleshooting the Printer.

Troubleshooting System Error Codes

Chapter 2 - *System Error Codes* contains a list of system error codes and their respective descriptions and recommended corrective actions. Only try one recommended action at a time and check if the error code has disappeared.

If you have an error code which is not documented in this Service Manual or you have an error which you cannot resolve, then report the error to the HP Response Center or the nearest HP Support Office. When reporting the error, have the following information ready:

- Model and Serial Number of the printer.
- Which firmware revision the printer is using.
- The complete error number.
- The System and History Prints.
- Which software application the customer is using (name, version, etc.).

Whenever an Error Message is displayed, you should try to switch the Printer Off and then On again to see if the error disappears. If the error disappears, there is no need to troubleshoot the Printer any further.

Performing a Service Test on a Failed Assembly

If possible, always perform a Service Test on the component/assembly that you are about to replace, just to make sure that is the actual component/assembly that has failed.

If the test on that component/assembly passes, you should NOT replace it.

For information on the Service Tests and how to use them see Chapter 4 - *Maintenance Mode*.

Performing the Necessary Service Calibrations or Adjustments

Is the printer calibrated or adjusted correctly after replacing a component? For information on the Service Calibrations and Adjustments and how to use them, see Chapter 5 - *Adjustments and Calibrations*.

Remember that certain Calibrations or Adjustments are required even if an Assembly has been disassembled to gain access to another Assembly or Component.

Solving Print Quality Problems

Whenever a Print Quality problem appears, it is advisable to print the Test Print to help diagnose the problem. The Test Print will help you differentiate between possible Printhead errors or mechanical problems. For information on solving Print Quality problems see Chapter 6 - *Print Quality*.

The Printer does not Power ON

1. Check that the power cord is connected correctly to the Printer and to the Power Socket.
2. Check that the Power Switch on the BACK of the Printer is in the ON position.
3. Replace the Power Supply Unit ⇒ Page *8-43*.

Cover Sensors are not Working

1. Perform the Sensors Test ⇒ Page *4-53*.
2. Check if the cable for the faulty sensor is not damaged and is connected correctly.
3. Replace the faulty Sensor.

The File Sent is Not Processed Immediately

1. Check that the USB Cable is connected correctly to the Computer and the Printer and that it is NOT damaged.
2. Check that the Data LED on the Front Panel is flashing. If it is flashing and nothing is printed, then maybe the file sent is corrupted or too big.
3. Make sure that the Printer is in the Online state when the file is sent. The file will be rejected if the file is sent when the Printer is in the Offline state.

Paper Jams Occur Frequently

1. Make sure that the paper type setting matches the type of paper loaded into the Printer.
2. Open the Rear Cover and check for any visible obstacles in the paper path. If there is a wrinkled mass of paper inside the paper path, lift the Pinchwheels (using the Media Lever) and clear the obstruction.
3. Make sure that the Vacuum Fans are working correctly.

Print Speed is Very Slow

1. Make sure that the Printer is being used at temperatures of 20°C or higher.

No Ink Message when there is Enough Ink

1. Make sure that the Ink Cartridge is installed correctly.
2. Check that the connector in the Ink Cartridge is NOT damaged.
3. Make sure that the Ink Cartridge Sensors are working correctly. Perform the Ink Sensor Test ⇒ Page *4-54*.

Abnormal Sound Coming from the Printer

1. One of the Motors in the Printer might be defective. Check that the Motors are working correctly ⇒ Page *4-70*.
2. Check that there are no foreign or loose objects inside the Printer.

Front Panel is Not Working

1. Make sure that the Front Panel Cable is connected correctly to the Front Panel and to the Main PCA.
2. Make sure that the Front Panel Cable is NOT damaged.
3. Replace the Front Panel ⇒ Page *8-25*.

Heater Panel is Not Working

1. Make sure that ALL Heater Panel Cables are connected correctly to the Heater Panel.
2. Make sure that the Heater Panel Cables are NOT damaged.
3. Replace the Heater Panel ⇒ Page *8-27*.

Solving Heater Problems

"Power ON Heater Power Switch" appears on Heater Panel

1. Check that the Heater Power Cable is connected and that the heater Power Switch is switched On.
2. Replace the Heater Relay Assembly ⇒ Page *8-46*.
3. Replace the Heater Panel ⇒ Page *8-27*.

Heater Does NOT become Hot

1. Try performing the Heater Test ⇒ Page *4-88*. If the Heater **does not** work during the test, try the following:
   - Make sure that the Cable between the Heater Panel and the Heater Relay Assembly is connected correctly and NOT damaged.
   - Make sure that the Heaters are connected correctly to the power voltage alternation switch.
   - Replace the Heater Relay Assembly ⇒ Page *8-46*.
   - Replace the Heater Panel ⇒ Page *8-27*.
2. If the Heater **does** work during the Heater test, try the following:
   - Make sure that ALL Heater Panel Cables are connected correctly to the Heater Panel.
   - Make sure that the Heater Panel Cables are NOT damaged.
   - Replace the Heater Panel ⇒ Page *8-27*.
   - Replace the Main PCA ⇒ Page *8-35*.

Abnormal Temperature is Displayed

1. Make sure that the Heater that is experiencing the abnormal temperature is installed correctly. Check that the Heater Cable is connected correctly.
2. Replace the Heater Panel ⇒ Page *8-27*.
3. Replace the Heater that is experiencing the abnormal temperature.

The Heater Temperature Becomes Extremely High

1. Make sure that the Heater that is experiencing the high temperature is installed correctly. Check that the Heater Cable is connected correctly.
2. Replace the Heater Panel ⇒ Page *8-27*.
3. Replace the Heater Relay Assembly ⇒ Page *8-46*.

"Initializing" Continuously Appears on the Heater Panel

1. Make sure that the Cable between the Heater Panel and the Main PCA is connected correctly and NOT damaged.
2. Replace the Heater Panel ⇒ Page *8-27*.
3. Replace the Main PCA ⇒ Page *8-35*.

"Power Save Mode" Continuously Appears on the Heater Panel

1. Make sure that the Cable between the Heater Panel and the Power Supply Unit is connected correctly and NOT damaged.
2. Replace the Heater Panel ⇒ Page *8-27*.
3. Replace the Power Supply Unit ⇒ Page *8-43*.
4. Replace the Main PCA ⇒ Page *8-35*.

Special Power On Procedure

When turning On the Printer, the Printer will follow the internal initialization process, turning on the different systems and making the necessary system checks. In order to troubleshoot the Printer the following Power On options are available:

1. Press the **Cancel** key and Power On button - This will allow you to skip the system check of the Printer.
2. Press the **Cancel** and **Shift** keys and Power On button - This will allow you to skip the error recovery check of the Printer. You will be given the option to enter the Maintenance Mode in order to troubleshoot the Printer by entering a password: ◀, ▶, **Shift** and **OK**.

   MAINTENANCE MODE
   PASSWORD?

   - This option is useful if you want to perform the following:
     - Ink purging without installing media. In a normal power On situation, the Printer cannot function without the media loaded.
     - Recovery of a damaged NVRAM. By powering in the special power On situation, the NVRAM can be recovered by entering the Maintenance Mode and by performing the necessary steps to recover the NVRAM.

Both NVRAM and Main PCA are Replaced Together

When both the NVRAM and the Main PCA are replaced at the same time, mechanical correction value parameters, counters, calibrations, etc... are lost. Whenever possible, this most be prevented by just replacing either the NVRAM or the Main PCA. If for whatever reason, both the NVRAM and the Main PCA are replaced together, you need to perform the following:

1. Make sure that the NVRAM and the Main PCA have been installed correctly.
2. Press the **Cancel** key and Power On button in order to skip the system check.
3. Enter into the Maintenance Mode ⇒ Page *4-7*.
4. Press the **Shift** key once and then the ◀ key to enter in to the Setup menu.
5. In the Setup submenu, scroll to "NVRAM Init" and press the **OK** key.

   ```
   # NVRAM INIT
   >
   ```

6. You will need to confirm that you want to initialize the NVRAM by pressing the **OK** key.

   ```
   # NVRAM INIT
   * OK?
   ```

7. In the Setup submenu, scroll to "Language" and press the **OK** key.

   ```
   # LANGUAGE
   > ENGLISH
   ```

8. In the Language submenu, select "English" or "Japanese" and press the **OK** key.

   ```
   # LANGUAGE
   * ENGLISH
   ```

9. Power Off the Printer.
10. Press the **Cancel** and **Shift** keys and Power On button in order to skip the error recovery check of the Printer.
11. Perform the Line Sensor Test (⇒ Page *4-53*) to register the platen's maximum value read by the Line Sensor to the NVRAM automatically.
12. Power Off the Printer, wait a few seconds and power On the Printer again.
13. You will need to check, and if necessary perform the following:
    - Wiping Position Calibration ⇒ Page *5-23*.
    - Capping Position Calibration ⇒ Page *5-25*.
    - Printhead Voltage ⇒ Page *4-22*.
    - Printhead Row Value ⇒ Page *4-19*.
    - Printhead to Printhead Value ⇒ Page *4-19*.
    - Bidirection Definitions ⇒ Page *4-21*.
    - Media Advance Print ⇒ Page *4-11*.

- Side Margin Position Calibration ⇒ Page *5-27*.
- Top Margin Position Calibration ⇒ Page *5-28*.

14 In the Printhead Maintenance submenu, scroll to "Ink Charge Done" and press the **OK** key.

```
# INK CHARGE DONE
> NO
```

15 In the Ink Charge Done submenu, select "Yes" to indicate that ink charge has been completed and then press the **OK** key.

```
# INK CHARGE DONE
* YES
```

16 In the Setup submenu, scroll to "Save Calibs" and press the **OK** key.

```
# SAVE CALIBS
>
```

17 You will need to confirm that you want to save the NVRAM Calibrations by pressing the **OK** key.

```
# SAVE CALIBS
* OK?
```

18 In the Setup submenu, scroll to "Save NVRAM" and press the **OK** key.

```
# SAVE NVRAM
>
```

19 You will need to confirm that you want to save the NVRAM contents by pressing the **OK** key.

```
# SAVE NVRAM
* OK?
```

20 Power Off the Printer, wait a few seconds and power On the Printer again.

System Error Codes 2

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System Error Codes

Introduction

The following pages contain a list of error codes and their respective descriptions and recommended corrective actions. Only try one recommended action at a time and check if the error code has disappeared.

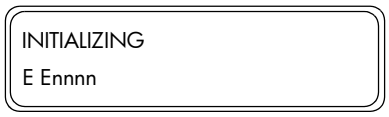
If you have an error code which is not documented in this Service Manual or you have an error which you cannot resolve, then report the error to the HP Response Center or the nearest HP Support Office. When reporting the error, have the following information ready:

- Model and Serial Number of the printer.
- Which firmware revision the printer is using.
- The complete error number.
- The Service Configuration Print.
- The Current configuration sheet.
- Which software application the customer is using (name, version, etc.).

Whenever an Error Message is displayed, you should try to switch the Printer Off and then On again to see if the error disappears. If the error disappears, there is no need to troubleshoot the Printer any further.

Self-Diagnostic Errors at Power On

When the Printer is powered up, it performs the Boot-Up sequence which initializes the major components of the Printer. If for some reason the Boot-Up sequence fails because a component has failed to initialize, an error code will appear on the Front Panel.



The Boot-Up error codes are hexa-decimal based numbers and correspond to bits which are explained in the following table:

Bit	Error Code (nnnn)	Diagnosis
0	0001	Internal RAM
1	0002	SRAM
2	0004	Flash ROM
3	0008	PIO
4	0010	NVRAM
5	0020	FPGA (Main PCA)
6	0040	FPGA (Carriage PCA)
7	0080	ASIC CONF (Main PCA)
8	0100	ASIC CONF (Carriage PCA)
9	0200	DRAM
10	0400	USB Register
11	0800	Power Supply
13, 14, 15	-	Reserved

When multiple errors occur during the Boot-Up sequence, the error codes are added together and only one hexa-decimal figure is displayed on the Front Panel. For example, if the **NVRAM** and the **Power Supply** fail during the Boot-Up sequence, the error code E0810 will be displayed.

NVRAM (0010) + Power Supply (0800) = 0810

Each error code and it's appropriate corrective actions are explained on the following pages.

Boot-Up Error: Internal RAM (**0001**)

Problem Description: The read/write of the RAM on the Main PCA was diagnosed and an error was detected.

Corrective Action: Try the following:

- Replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: SRAM (**0002**)

Problem Description: The read/write of the SRAM on the Main PCA was diagnosed and an error was detected.

Corrective Action: Try the following:

- Replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: Flash ROM (**0004**)

Problem Description: The program area in the Flash ROM is sum-checked, and it could not be read, causing an error.

Corrective Action: Try the following:

- Reinstall the Firmware (Printer and Boot Firmware).
- If the Error continues, replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: PIO (**0008**)

Problem Description: The read/write of a specific Parallel I/O (PIO) was tested and an error was detected.

Corrective Action: Try the following:

- Replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: NVRAM (**0010**)

Problem Description: Problems with the NVRAM detected.

Corrective Action: Try the following:

- If multiple errors have occurred that include the NVRAM error, try to resolve the other errors first. After resolving the other errors (except NVRAM), switch the Printer Off.
- Switch the Printer On again and only the NVRAM error recovery will be performed.
- If System Error Code 11Ax appears when the Printer is turned On, then refer to Page *2-10*.
- Replace NVRAM ⇒ Page *8-39*.
- Replace Main PCA ⇒ Page *8-35*.

Boot-Up Error: FPGA (Main PCA) (**0020**)

Problem Description: The read/write of the FPGA-ATG (Band Memory) and FPGA-RSM (Mask Memory) registers on the Main PCA was diagnosed and an error was detected.

Corrective Action: Try the following:

- Replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: FPGA (Carriage PCA) (**0040**)

Problem Description: The read/write of the FPGA-PTC (Print Timing Controller) and FPGA-PDD (Print Data Distributor) registers on the Carriage PCA was diagnosed and an error was detected.

Corrective Action: Try the following:

- Replace the Carriage PCA ⇒ Page *8-91*.
- Make sure that the Carriage Cable is correctly connected.
- Replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: ASIC CONF (Main PCA) (**0080**)

Problem Description: The program load from the Flash ROM on the Main PCA to the FPGA on the Main PCA or sum-check was not performed correctly and an error occurred.

Corrective Action: Try the following:

- Reload the ASIC program from the IC Card.
- Replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: ASIC CONF (Carriage PCA) (**0100**)

Problem Description: The program load from the Flash ROM on the Main PCA to the ASIC on the Carriage PCA or sum-check was not performed correctly and an error occurred.

Corrective Action: Try the following:

- Reload the ASIC program from the IC Card.
- Make sure that the Carriage Cable is correctly connected.
- Replace the Carriage PCA ⇒ Page *8-91*.
- Replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: DRAM (**0200**)

Problem Description: The read/write of the image band memory on the Main PCA was diagnosed and an error was detected

Corrective Action: Try the following:

- Replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: USB Register (**0400**)

Problem Description: The read/write of the USB controller on the Main PCA was diagnosed and an error was detected.

Corrective Action: Try the following:

- Replace the Main PCA ⇒ Page *8-35*.

Boot-Up Error: Power Supply (+36V, +24V, +12V) (**0800**)

Problem Description: The power supplies of +36, +24 and +12 V were diagnosed and could not be detected.

Corrective Action: Try the following:

- Open the Electronics Cover and check LED 11 and LED 13.
- If both LED 11 and LED 13 are OFF, then try the following:
  - Check the Interlock Switches to make sure they are installed/connected correctly. Make sure that the Rear Cover lips (that activate the Interlock Switches) are not bent and that the Rear Cover is closed correctly.
  - If the Interlock Switches are installed and connected correctly, then replace the Main PCA ⇒ Page *8-35*.
- If both LED 11 and LED 13 are ON, then try the following:
  - Check whether the correct voltages are supplied from the power source (refer to the table below). If the correct voltages are not supplied, then replace the Power Supply Unit ⇒ Page *8-43*.
  - It is possible that this error occurred because of a faulty Main PCA. Replace the Main PCA ⇒ Page *8-35*.
  - Check whether the motors have been short-circuited by testing +24 V. If +24 V is not supplied then replace both Scan-Axis/Paper-Axis Motors. If error continues, replace the Main PCA.

Power Line	Measuring Position (on the Main PCA)	Normal Value
+1.5 V	TP70	+1.45 V to +1.55 V
+3.3 V	TP69	+3.20 V to +3.40 V
+5 V REF	TP36	+4.90 V to +5.10 V
5 V	TP35	+4.75 V to +5.25 V
+12 V	TP50	+11.00 V to +13.00 V
+24 V	TP34	+23.00 V to +25.00 V
+36 V	TP93, TP33	+35.00 V to +37.00 V

System Error Codes

A System Error Code appears on the Front Panel when a component of the Printer has failed during normal usage. Each System Error Code and it's appropriate corrective actions are explained on the following pages.

System Error: System Error 1110: GA_ATG Block Clear Error

Problem Description: The ATG band memory block erase does not end. This error is checked during Boot-Up sequence and printing.

Corrective Action: Try the following:

- Replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 1111: GA_ATG DMA Transfer Error

Problem Description: There is a problem in the data path. This error is checked during printing.

Corrective Action: Try the following:

- Make sure that the host PC and the Printer are connected correctly via a USB Cable.
- Replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 112x: Vacuum Fan Error

Problem Description:

- x = 0: The Vacuum Fan (Wiping Side) has failed.
- x = 1: The Vacuum Fan (Center of the Platen) has failed.
- x = 2: The Vacuum Fan (Capping Side) has failed.

Corrective Action: Try the following:

- Replace the failing Vacuum Fan ⇒ Page *8-34*.
- If the error continues, replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 1140: Flash ROM Write Error

Problem Description: A time-out error occurs when the NVRAM contents are being saved in the flash memory in Maintenance Mode and erasing does not end.

Corrective Action: Try the following:

- Replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 1150: Home Position Sensor Error

Problem Description: The Carriage cannot be moved to it's home position.

Corrective Action: Try the following:

- Enter the Sensors Menu (in Maintenance Mode) and select "Printer Sensors". Then execute the "Home Position" option, which will display the state of the home position sensor. If the home position is detected, "1" will be displayed on the Front Panel. If the home position is not detected, manually move the Carriage and check the Front Panel to see if the "1" is displayed.
- Make sure the Home Position Sensor Cable is connected correctly and is not damaged.
- Replace the Home Position Sensor.
- Replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 1160: Wiping Error

Problem Description: When the Wiping Motor has been running for a while, the sensor fails to detect that the Motor has made one turn.

Corrective Action: Check whether the Wiper turns once and the Wiper Sensor detects the turn when the Printer is initializing when it is powered On.

- If the Wiper **does not** turn once:
  - Check manually by turning the Wiper Gears to see if the Wiper turns. If it does not turn then replace the Wiping Station.
  - Check whether 24 V is supplied to the Main PCA with the circuit tester. If the Wiper Motor does **not** turn even though the 24 V is supplied, there is a possibility of a failure in the Wiper Motor. Replace the Wiping Station ⇒ Page *8-129*.
  - Make sure the Wiper Sensor Cable is connected correctly and is not damaged.
  - If the error continues, replace the Main PCA ⇒ Page *8-35*.
- If the Wiper **does** turn once:
  - Check whether the Wiper Sensor can be switched ON and OFF by manually rotating the Wiper. Check whether the lever type switch is not loose.
  - Make sure the Wiper Sensor Cable is connected correctly and is not damaged.
  - Make sure that the Wiper Sensor is clean.
  - If the error continues, replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 1170: Temperature Sensor Error

Problem Description: The Temperature Sensor detects abnormal temperatures (-10°C or lower or 85°C or higher).

Corrective Action: Try the following:

- Make sure that the Printer is in an environment where the temperature is between -10°C and 85°C.
- Make sure the Ambient Temperature Sensor Cable is connected correctly and is not damaged.
- Replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 1180: Capping Motor Error

Problem Description: Capping Motor over current is detected.

Corrective Action: Try the following:

- When the ambient temperature is very low, the Pump Motor Tube becomes hard and the load on the Capping Motor is increased. Make sure that the Printer is in an environment where the temperature is not below -10°C or higher than +85°C.
- The Capping Station has a Torque Limiter for up and down operation so that the Capping Station does not experience any over current.
- Apply grease on the shaft of the Capping Station Gear so that it helps with rotation.
- Enter the Motors Menu (in Maintenance Mode) and open Solenoids L and R. Access the Pump Motors and check whether the Motor Drive Circuit and Motor work correctly by manually rotating the Motor. When the home position is set to "0", it is clear that the home position has not been adjusted and that capping is not available.
- Make sure that the Capping Station cables are connected correctly and are not damaged
- If the Capping Motor cannot be rotated, replace the Capping Station ⇒ Page *8-111*.
- Make sure the Cap Sensor Cable is connected correctly and is not damaged.
- Replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 119x: Head Relay Variable Supply Error

Problem Description: Output voltages of the Head Relay Board are abnormal.

Corrective Action: Try the following:

- Check whether 36V is supplied to the Main PCA. If not, then:
  - Make sure that the Rear Cover is closed.
  - Replace Power Supply Unit ⇒ Page *8-43*.
- Preset the Head Relay Board Voltage from the Diagnostic Menu. Use a circuit tester to check the voltages of the channels that have an error.
- If the voltage is supplied, it means that the voltage check circuit is defective. Replace the Main PCA ⇒ Page *8-35*.
- If the voltage is not supplied, replace the Head Relay Board ⇒ Page *8-40*.
- There is a possibility of a short circuit off the Head Relay Board output line. Perform a short circuit test on the Main PCA.
- Make sure the Carriage Trailing Cable is connected correctly and is not damaged.

System Error: System Error 11Ax: NVRAM Error

Problem Description: The data in the NVRAM is incorrect.

Corrective Action: Try the following:

- Switch the Printer OFF and ON again and check if the error still appears.
- If the error continues, skip the Power-ON Self-Diagnostic by keeping the Cancel Key pressed and powering ON the Printer. Perform NVRAM Initialization (⇒ Page *4-47*) and then perform Restore Calibs (⇒ Page *4-48*). Switch the Printer OFF and ON again and check if the error still appears.
- If the error continues, restore the Printer to defaults settings. Switch the Printer OFF and ON again and check if the error still appears.
- Check whether the NVRAM is mounted on the Main PCA correctly. If necessary, replace the NVRAM ⇒ Page *8-39*.
- If the error continues, replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 11C0: Cap Position Error

Problem Description: The Carriage position sensors have detected more than a 2mm gap during the capping operation.

Corrective Action: Try the following:

- Make sure that the Encoder Strip is **not** stained.
- Make sure that the Encoder Sensor is mounted correctly and that the cable is connected correctly.
- Make sure that the Trailing Cable is connected correctly.
- Replace the Carriage PCA ⇒ Page *8-91*.
- If the error continues, replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 11D0: Cooling Fan Error

Problem Description: When the Printhead temperature reaches above 43°C, the Printer will check whether the temperature drops below 43°C during printing. This error will appear if the temperature does not drop below 43°C after 10 minutes.

Corrective Action: Try the following:

- Make sure that the Printhead Cooling Fans are working correctly. If the Printhead Cooling Fans are not working correctly, replace them ⇒ Page *8-82*.
- Make sure that the Printer Cooling Fans are connected and working correctly.

System Error: System Error 11E0: Long Term Storage Error

Problem Description: This error is displayed when the Printer has been left switched OFF for more than 31 days.

Corrective Action: Try the following:

- This error can be avoided if the "Store Ink System" procedure is performed before turning the Printer OFF for long periods.
- To clear this error:
  - Turn the Printer ON in error skip mode by holding down the **Cancel** and **Shift** keys and pressing the ON button.
  - Enter the Password to clear the internal error flag: ◀, ▶, **Shift** and **OK**.
  - Switch the Printer OFF and then ON again.

System Error: System Error 120x: Printhead Drive IC Error

Problem Description: The Piezo Drive IC on a Printhead is too hot (85°C or higher) or too low (-10°C or lower).

Corrective Action: Try the following:

- Check whether the temperature of the Printhead voltage circuit on the Carriage PCA is extremely hot. If it is extremely high, check the short-circuit of the Printhead and the Printhead Cable using a tester. The Short-circuit may have been caused by the incorrect insertion of the Printhead Cable, internal failure of the Printhead or by a foreign object attached to the Carriage PCA.
- Replace the Printhead ⇒ Page *8-35*.
- Replace the Carriage PCA ⇒ Page *8-91*.

System Error: System Error 121x: Printhead Temperature Error

Problem Description: The Printhead temperature is too high (85°C or higher) or too low (-10°C or lower).

- x = 0: Printhead Number 1 (Black).
- x = 1: Printhead Number 2 (Light Magenta).
- x = 2: Printhead Number 3 (Light Cyan).
- x = 3: Printhead Number 4 (Yellow).
- x = 4: Printhead Number 5 (Magenta).
- x = 5: Printhead Number 6 (Cyan).

Corrective Action: Try the following:

- Check the failing Printhead to make sure that it is **not** damaged and that the cable are correctly connected
- Replace the Carriage PCA ⇒ Page *8-91*.
- Replace the Printhead ⇒ Page *8-35*.

System Error: System Error 1220: Edge Sensor Error

Problem Description: The Printer has problems detecting the edge of the Media.

Corrective Action: Try the following:

- Enter the Sensors Menu (in Maintenance Mode) and select "Printer Sensors". Then execute the "Line Sensor" option, and check if the Line Sensor is functioning correctly by inserting a white piece of paper underneath it. If the Line Sensor responds, then it is functioning correctly.
- If the Line Sensor does **not** respond to the white piece of paper, then replace the Line Sensor ⇒ Page *8-97*.
- Replace the Carriage PCA ⇒ Page *8-91*.

System Error: System Error 123x: Sub-Tank Sensor Error (Full or Half)

Problem Description: The Full and Half Sensors on the Sub-Tanks are defective.

- x = 0: Printhead Number 1 (Black).
- x = 1: Printhead Number 2 (Light Magenta).
- x = 2: Printhead Number 3 (Light Cyan).
- x = 3: Printhead Number 4 (Yellow).
- x = 4: Printhead Number 5 (Magenta).
- x = 5: Printhead Number 6 (Cyan).

Corrective Action: Try the following:

- Enter the Sensors Menu (in Maintenance Mode) and select "Sub Tank Sensor". Then execute ALL the "Full x" and "Half x" options, and check if the Sub-Tank Sensors are functioning correctly. Manually move the Sub-Tank Sensor Plate and if the Sensor responds, it means that it is working correctly.
- If any of the Sub-Tank Sensors fail to respond, then replace the corresponding Sub-Tank Sensor ⇒ Page *8-106*.
- Make sure that the Sub-Tank Sensor Relay Cables (Left/Right) and the Sub-Tank Sensor Cables are connected correctly and are not damaged.

- Replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 124x: Ink Supply Sensor Error

Problem Description: The Ink Supply Sensor does not change even though the specified time has passed after driving the Ink Supply Motor for the Sub-Tank.

- x = 0: Printhead Number 1 (Black).
- x = 1: Printhead Number 2 (Light Magenta).
- x = 2: Printhead Number 3 (Light Cyan).
- x = 3: Printhead Number 4 (Yellow).
- x = 4: Printhead Number 5 (Magenta).
- x = 5: Printhead Number 6 (Cyan).

Corrective Action: Try the following:

- Enter the Sensors Menu (in Maintenance Mode) and select "Sub Tank Sensor". Then, execute the "XX Ink Pump" option for each color, and check if the Ink Supply Sensor is functioning correctly. Manually move the gear and if the Sensor responds, it means that it is working correctly.
- If any of the Ink Supply Sensors fail to respond, then replace the corresponding Ink Supply Station ⇒ Page *8-101*.
- Enter the Motors Menu (in Maintenance Mode) and set the "X Pump Motor" option to "Normal" to drive the Ink Supply Motor. When the Sub-Tank is already full, it will not be checked and therefore ink should be discharged. Once the motor drive has been checked, set it "Stop" immediately. Repeat the process with the other colors.
- If any Ink Supply Motor fails, then replace the corresponding Ink Supply Station ⇒ Page *8-101*.
- Replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 125x: Sub-Tank Supply Error

Problem Description: The Sub-Tank Sensor does not switch to less than half even though ink has been consumed.

- x = 0: Printhead Number 1 (Black).
- x = 1: Printhead Number 2 (Light Magenta).
- x = 2: Printhead Number 3 (Light Cyan).
- x = 3: Printhead Number 4 (Yellow).
- x = 4: Printhead Number 5 (Magenta).
- x = 5: Printhead Number 6 (Cyan).

Corrective Action: Try the following:

- Enter the Motors Menu (in Maintenance Mode) and set the "Solenoid L" and "Solenoid R" options to "Closed" to cut the outside air. Now set the "Cap Stat Motor" to "Prime" to discharge the ink from the Sub-Tank and check if the Ink Supply Motor drives by turning the power ON again when there is a little bit of ink left. If the Motor is not driven, replace the corresponding Cable or Ink Supply Station.
- Check whether the Sub-Tank Sensor Plate works correctly and is not blocked by any foreign object.

- Enter the Sensors Menu (in Maintenance Mode) and select "Sub Tank Sensor". Then, execute the "XX Ink Pump" option for each color, and check if the Ink Supply Sensor is functioning correctly. Manually move the gear and if the Sensor responds, it means that it is working correctly.
- If any of the Ink Supply Sensors fail to respond, then replace the corresponding Ink Supply Station ⇒ Page *8-101*.
- Replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 126x: Trailing Cable Connection Error

Problem Description: The Trailing Cable connected to the one of the following connectors is faulty.

- x = 0: Connector 9.
- x = 1: Connector 10.
- x = 2: Connector 11.
- x = 3: Connector 12.

Corrective Action: Try the following:

- Reconnect the Trailing Cable to the Carriage PCA and the Main PCA.
- Make sure that the Trailing Cable is not damaged.
- Replace the Carriage PCA ⇒ Page *8-91*.
- If the error continues, replace the Main PCA ⇒ Page *8-35*.

System Error: System Error 1700: Servo Motor Error

Problem Description: The Paper-Axis or the Scan-Axis Motor moves the Carriage, but the input from the Linear Encoder Sensor does not change.

Corrective Action: Try the following:

- Make sure that there is no paper jam blocking the Carriage path.
- Make sure that the corresponding cables are connected correctly to Connectors CN14 and CN17 on the Main PCA.
- Make sure that the Linear Encoder Sensor Cable is connected correctly to the Carriage PCA.
- Make sure that the Encoder Strip is not damaged or scratched.
- Make sure that the pinchwheels rotate correctly.
- Make sure that the Carriage gears work correctly
- Replace the Main PCA ⇒ Page *8-35*.
- If the error continues, replace the Paper-Axis or Scan-Axis Motors.

Heater Error Codes

A Heater Error Code appears on the Heater Panel when a component of the Heater has failed during normal usage. Each Heater Error Code and it's appropriate corrective actions are explained on the following pages.

Heater Error: Heater Error H01: System Error

Problem Description: Abnormal operation of the Heater Relay Assembly.

Corrective Action: Try the following:

- Replace the Heater Relay Assembly ⇒ Page *8-46*.

Heater Error: Heater Error H02: Relay Board Error

Problem Description: The Heater Board and the Relay Board are not connected together.

Corrective Action: Try the following:

- Make sure that the Heater Board is connected correctly to the Relay Board via the Relay Cable.
- Replace the Heater Relay Assembly ⇒ Page *8-46*.

Heater Error: Heater Error H03: Front Heater Temperature Error

Problem Description: Temperature read by the Front Heater is abnormal (lower than -10ºC or higher than 70ºC).

Corrective Action: Try the following:

- Make sure that the Heater Relay Assembly is connected correctly to the Front Heater.
- Replace the Heater Relay Assembly ⇒ Page *8-46*.
- Replace the Front Heater ⇒ Page *8-29*.

Heater Error: Heater Error H04: Rear Heater Temperature Error

Problem Description: Temperature read by the Rear Heater is abnormal (lower than -10ºC or higher than 70ºC).

Corrective Action: Try the following:

- Make sure that the Heater Relay Assembly is connected correctly to the Rear Heater.
- Replace the Heater Relay Assembly ⇒ Page *8-46*.
- Replace the Rear Heater ⇒ Page *8-31*.

Heater Error:	Heater Error H05: Center Heater Temperature Error
Problem Description:	Temperature read by the Center Heater is abnormal (lower than -10°C or higher than 70°C).
Corrective Action:	Try the following: ■ Make sure that the Heater Relay Assembly is connected correctly to the Center Platen. ■ Replace the Heater Relay Assembly ⇒ Page *8-46*. ■ Replace the Center Platen ⇒ Page *8-33*.

Heater Error:	Heater Error H06: Front Heater Time-out Error
Problem Description:	The temperature of the Front Heater does not reach the preset temperature even after 15 minutes.
Corrective Action:	Try the following: ■ Make sure that the Voltage alternation switch located at the back of the Printer is set correctly to the AC voltage being used. ■ Make sure that the Fuse (F2) on the Heater Relay Assembly has not blown. If the fuse has blown, replace it. ■ Make sure that the Heater Board is connected correctly to the Relay Board via the Relay Cable. ■ Make sure that the Heater Relay Assembly is connected correctly to the Front Heater. ■ Replace the Heater Relay Assembly ⇒ Page *8-46*. ■ Replace the Front Heater ⇒ Page *8-29*.

Heater Error:	Heater Error H07: Rear Heater Time-out Error
Problem Description:	The temperature of the Rear Heater does not reach the preset temperature even after 15 minutes.
Corrective Action:	Try the following: ■ Make sure that the Voltage alternation switch located at the back of the Printer is set correctly to the AC voltage being used. ■ Make sure that the Fuse (F2) on the Heater Relay Assembly has not blown. If the fuse has blown, replace it. ■ Make sure that the Heater Board is connected correctly to the Relay Board via the Relay Cable. ■ Make sure that the Heater Relay Assembly is connected correctly to the Rear Heater. ■ Replace the Heater Relay Assembly ⇒ Page *8-46*. ■ Replace the Rear Heater ⇒ Page *8-31*.

Heater Error:	Heater Error H08: Center Heater Time-out Error
Problem Description:	The temperature of the Center Heater does not reach the preset temperature even after 15 minutes.
Corrective Action:	Try the following: ■ Make sure that the Voltage alternation switch located at the back of the Printer is set correctly to the AC voltage being used. ■ Make sure that the Fuse (F2) on the Heater Relay Assembly has not blown. If the fuse has blown, replace it. ■ Make sure that the Heater Board is connected correctly to the Relay Board via the Relay Cable. ■ Make sure that the Heater Relay Assembly is connected correctly to the Center Platen. ■ Replace the Heater Relay Assembly ⇒ Page *8-46*. ■ Replace the Center Platen Heater ⇒ Page *8-33*.

Heater Error:	Heater Error H09: Operation Panel Switch Error
Problem Description:	The specified switch is not pressed for 30 seconds or more when the diagnostics that verifies the switch action is executed.
Corrective Action:	Try the following: ■ Replace the Heater Relay Assembly ⇒ Page *8-46*.

Heater Error:	Heater Error H10: Zero Cross Error
Problem Description:	This error occurs when the diagnostics for the AC Relay is executed.
Corrective Action:	Try the following: ■ Make sure that the Heater Board is connected correctly to the relays on the Heater Block Assembly ■ Make sure that the Heater Board is connected correctly to the Relay Board via the Relay Cable. ■ Replace the Heater Relay Assembly ⇒ Page *8-46*.

System Error Codes

A System Error Code appears on the Front Panel when an unrecoverable system exception interrupt occurs in the Printer.

nnnn: System Error Code

The System Error Codes are listed in the following table:

System Error Code	Error Description
F_es: 0001	Operation Code Exception
F_es: 0002	Slot Illegal Exception
F_es: 0003	Address Exception
F_es: 0004	DMA Error
F_es: 0005	NMI Occurrence (WatchDog Error)

Corrective Action

1. Replace the Main PCA ⇒ Page *8-35*.
2. Upgrade the Printer Firmware.

Printhead Adjustment 3

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Install the Printhead Adjustment Jigs in the Carriage 3-5
Set Printhead Voltage 3-9
Print the Printhead Adjustment Pattern 3-10
Perform Printhead Position Correction 3-11
Print the Check Printhead Pattern 3-14
Adjust the Printhead 3-15
Tip to Speed-Up the Printhead Adjustment 3-19

Printhead Adjustment

Introduction

The mechanical adjustment of a Printhead must be done every time a Printhead is removed or replaced. If the adjustment of the Printheads is not done, you could get Print Quality problems like banding. The Printhead Adjustment should be done in the following order:

1. Calibrate the Printhead Adjustment Jig.
2. Install the Printhead Adjustment Jigs in to the Carriage.
3. Set Printhead Voltage.
4. Print the Printhead Adjustment pattern.
5. Perform Printhead Position correction.
6. Print the Check Printhead pattern.
7. Mechanically adjust the Printhead.

Tools Required

The Tools required to perform the Printhead Adjustment procedure are shown below. Without these tools, the Printhead Adjustment procedure cannot be completed correctly.

Printhead Adjustment Jig 1

Printhead Adjustment Reference Plate

Printhead Positioning Pins

Printhead Adjustment Jig 2

Small Flat-Head Screwdriver

Cross-Head Screwdriver

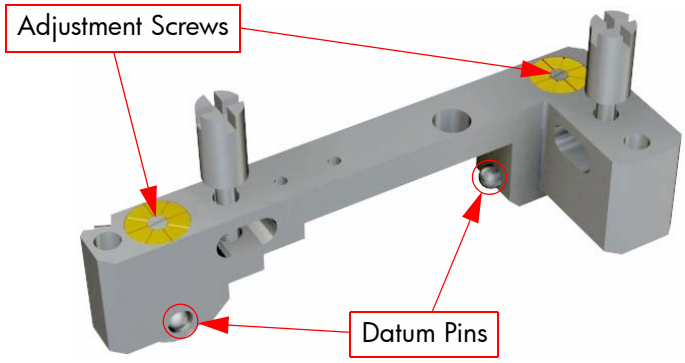
Measuring Loupe

Calibrate the Printhead Adjustment Jig

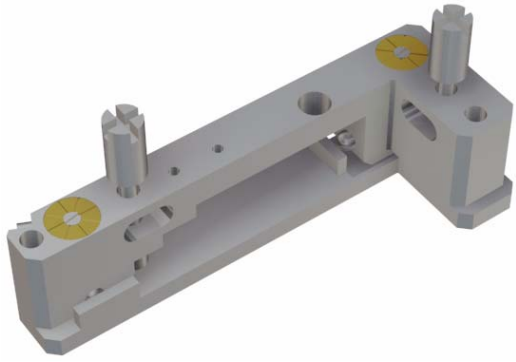
To speed up the Printhead Adjustment, you can follow the tip on Page *3-19*. If the tip is followed, then it is not necessary to calibrate the Printhead Adjustment Jig.

Before installing the Printhead Adjustment Jig 1 in to the Carriage, it needs to be calibrated as follows:

1 Retract the datum pins located in the Printhead Adjustment Jig 1 by turning the Adjustment Screws counterclockwise using a small Flat-Head Screwdriver.

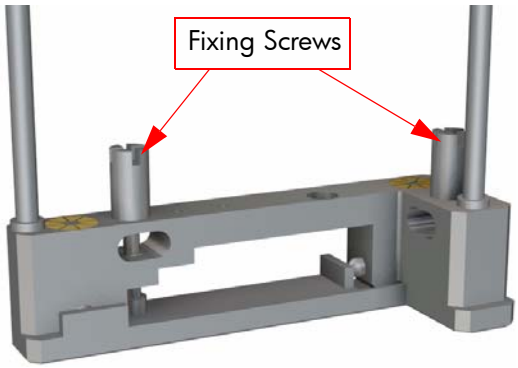


2 Place the Printhead Adjustment Jig 1 on top of the Printhead Adjustment Reference Plate as shown:

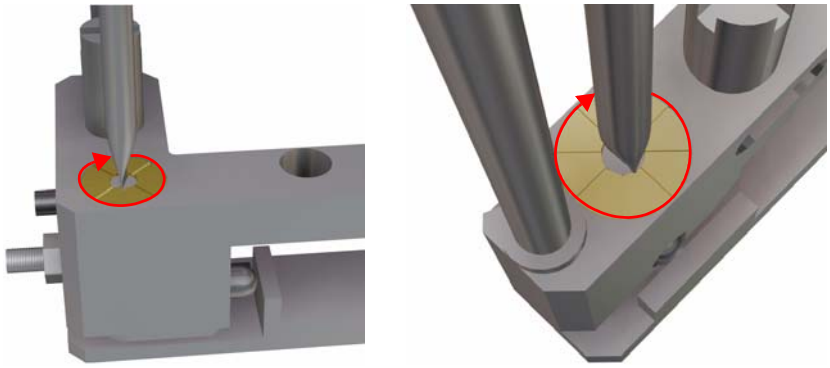


3 Insert the two Printhead Positioning Pins in to the Printhead Adjustment Jig 1.

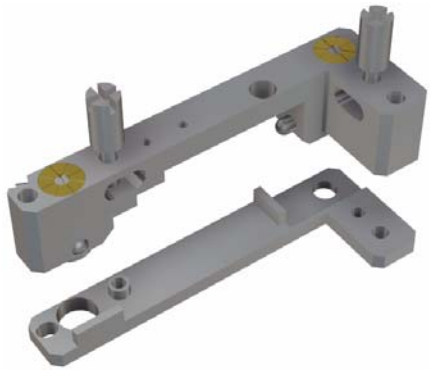
4 Tighten the two fixing screws so that the Printhead Adjustment Jig 1 is securely attached to the Printhead Adjustment Reference Plate.



5 Place the Printhead Adjustment Jig on a flat surface and without holding it, gently turn the Adjustment Screws clockwise until the Printhead Adjustment Jig begins to move. Check that the Datum Pins touch the walls of the Printhead Adjustment Reference Plate. Do **NOT** force the Adjustment Screws too much as this could damage the Datum Pins.



6 Once the Printhead Adjustment Jig 1 has been calibrated, you can loosen the fixing screws, remove the Printhead Positioning Pins and remove the Printhead Adjustment Reference Plate.

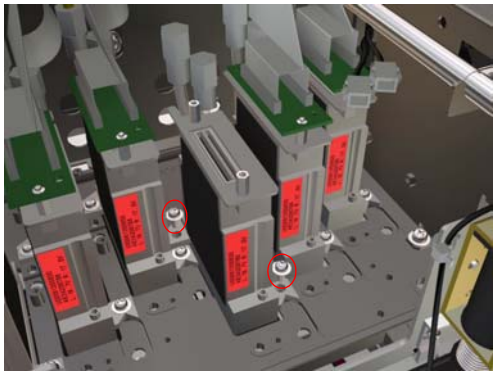


Install the Printhead Adjustment Jigs in the Carriage

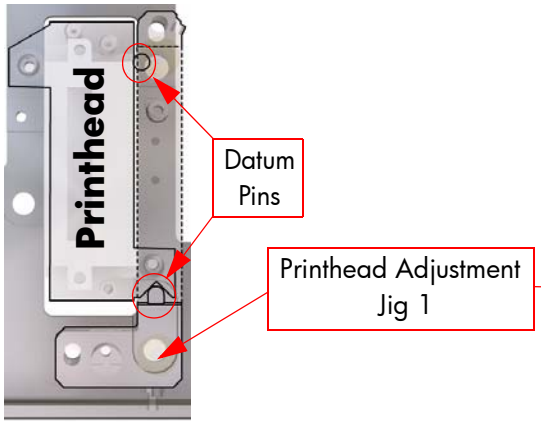
The next procedure will be to install the Printhead in to the Carriage and install the Printhead Adjustment Jigs as follows:

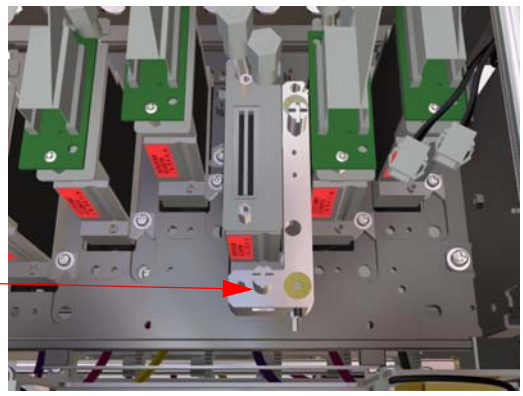
Never touch the Printhead nozzles. They can be easily damaged or clogged. For Printhead removal information, refer to Page *8-86*.

1 Install the new Printhead in to the Carriage and secure it with two screws. The screws should not be tightened too much, just enough so that the Printhead does not move loosely.

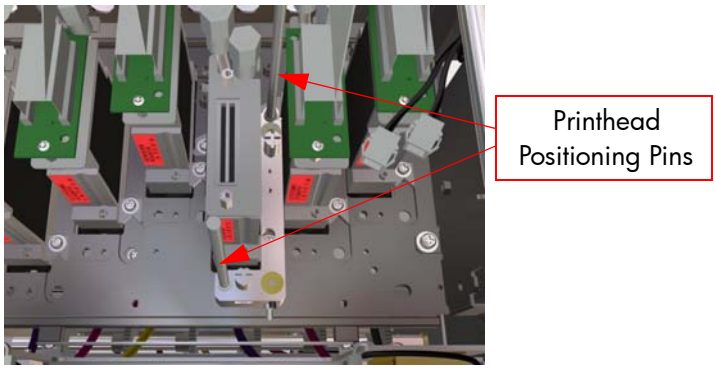


2 Install the Printhead Adjustment Jig 1 in to position against the Carriage Base Plate. Make sure that the 2 datum pins touch the Printhead as shown.

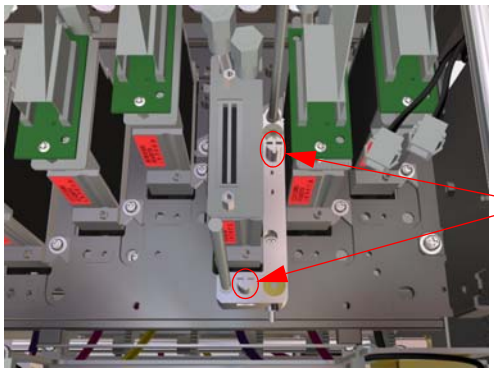




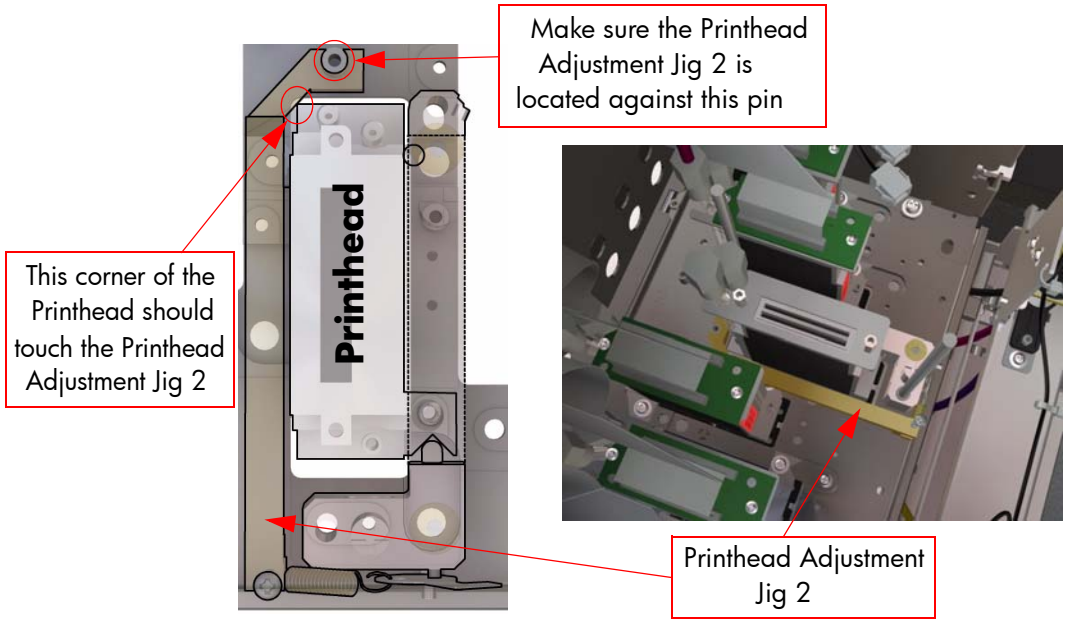
3 Insert the two Printhead Positioning Pins into the Printhead Adjustment Jig 1.



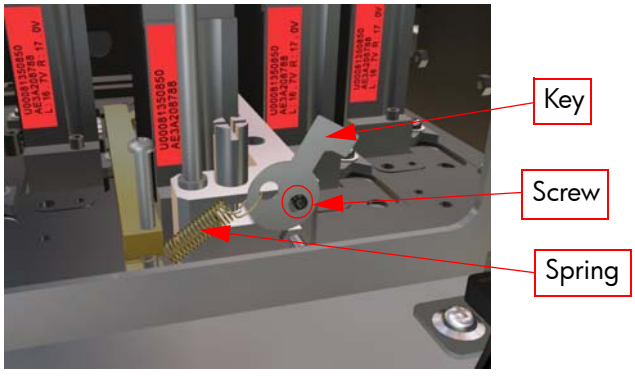
4 Tighten the two fixing screws so that the Printhead Adjustment Jig 1 is securely attached to the Carriage Base Plate.



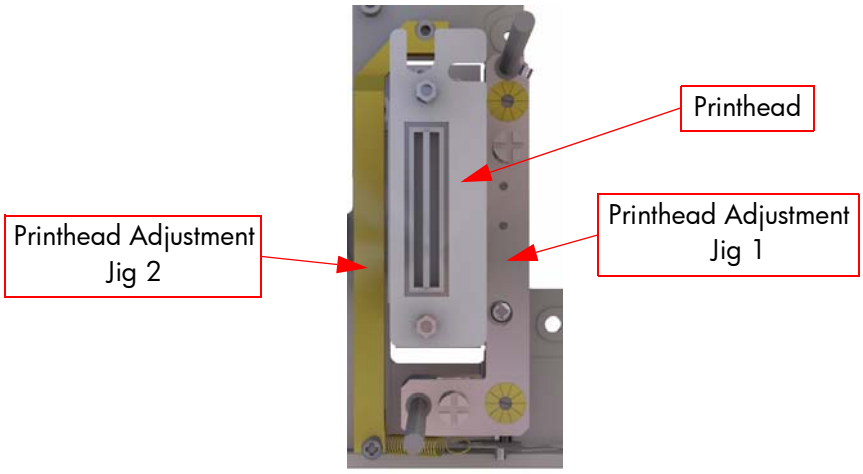
5 Install the Printhead Adjustment Jig 2 in to position against the Carriage Base Plate.


Make sure the Printhead Adjustment Jig 2 is located against this pin
This corner of the Printhead should touch the Printhead Adjustment Jig 2
Printhead
Printhead Adjustment Jig 2

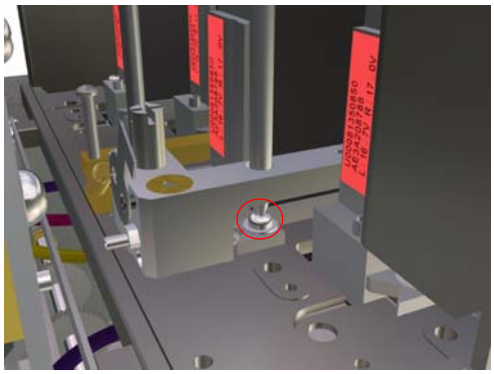
6 Stretch the spring and hook the key over the top screw of the Printhead Adjustment Jig 1 as shown.



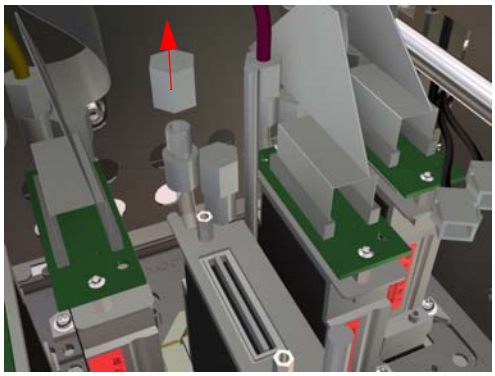
7 The following drawing shows the overall position of the Printhead Adjustment Jigs in relation to the Printhead (the tubes have been removed for clarity).



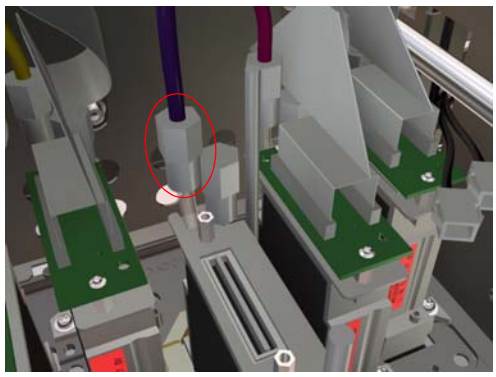
8 Once the Printhead Adjustment Jigs are in place, tighten the front screw that secures the Printhead to the Carriage Base Plate.



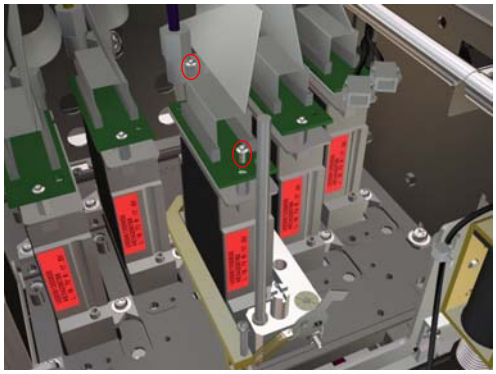
9 Remove the tube cap from the Printhead.



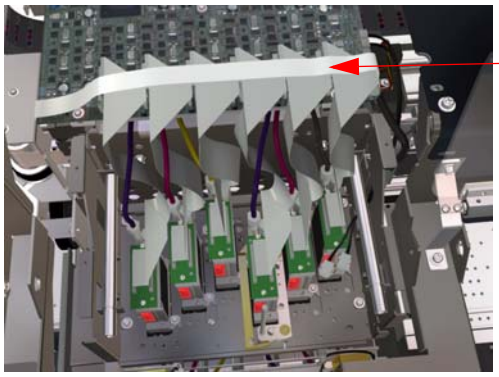
10 Attach the Ink Tube to the Printhead and secure it tightly.



11 Attach the Printhead Connector Assembly to the Printhead and secure it with 2 screws.



12 Before moving to the next stage of the Printhead Adjustment procedure, make sure that the Printhead Connector cables are safely secured with tape so that they don't hit other parts of the Printer.



13 Enter into the Ink System Options submenu and select "Wash Printheads" in order to charge the replaced Printhead with ink.

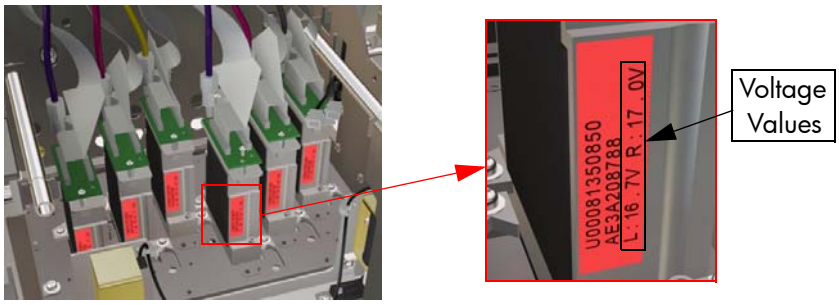
14 Print a Nozzle Check pattern in order to verify that ink has been charged correctly into the Printhead. If any of the nozzles are not firing correctly, then perform a Normal Printhead Recovery and then retry the nozzle Check pattern.

Set Printhead Voltage

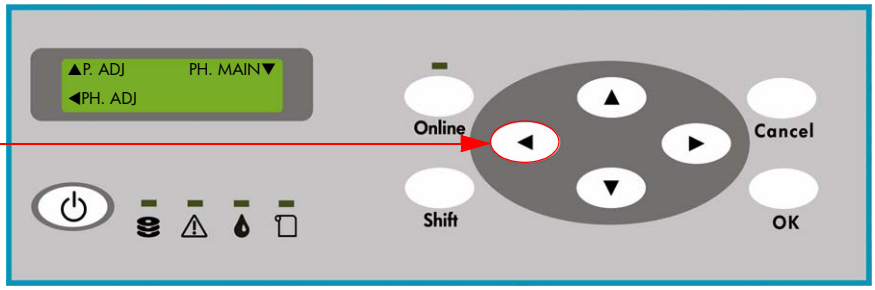
Before the Printhead can be used to print correctly, you must set the Printhead Voltage as follows:

Remember to set BOTH the left and right Printhead Voltage values for each Printhead correctly.

You can find the Printhead Voltage values on each Printhead as shown:



1. Power On the Printer and enter in to the Maintenance Mode ⇒ Page *4-7*.
2. Press the ◀ key to enter in to the Printhead Adjustment menu.



3. In the Printhead Adjustment submenu, scroll to "PH Voltage" and press the ▶ key.

```
# PH VOLTAGE
# Lm (L)
```

4. In the PH Voltage submenu, select the color of the Printhead (either left or right) for which you would like to set the Printhead Voltage and press the **OK** key. If you would like to exit the PH Voltage submenu, press the ◀ key.

```
# PH VOLTAGE
> Lm (L)   >16.0 V
```

5. Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of 12.0 to 20.0 V (in increments of 0.1 V). Press the **OK** key once you have entered the new value.

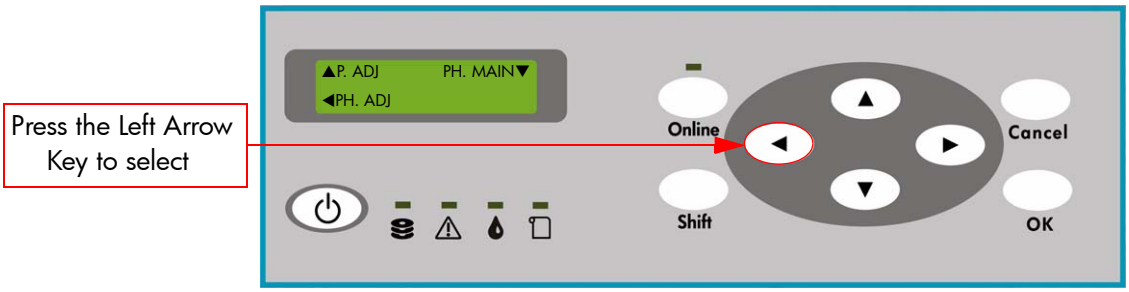
```
# PH VOLTAGE
> Lm (L)   >17.6 V
```

Print the Printhead Adjustment Pattern

In order to correct the Printhead position, you must first print the Printhead Adjustment pattern as follows:

1 Enter in to the Maintenance Mode ⇒ Page *4-7*.

2 Press the ◀ key to enter in to the Printhead Adjustment menu.



1 In the Printhead Adjustment submenu, scroll to "PH Adj Print" and press the **OK** key.

```
# PH ADJ PRINTS
> NOZZLE CHECK
```

2 In the Printhead Adjustment Prints submenu, scroll to "Printhead Adj" and press the **OK** key.

```
# PH ADJ PRINTS
* PRINTHEAD ADJ
```

3 You will need to confirm that you want to print the Printhead Adjustment pattern by pressing the **OK** key.

```
# PH ADJ PRINTS
* PRINTHEAD ADJ   OK?
```

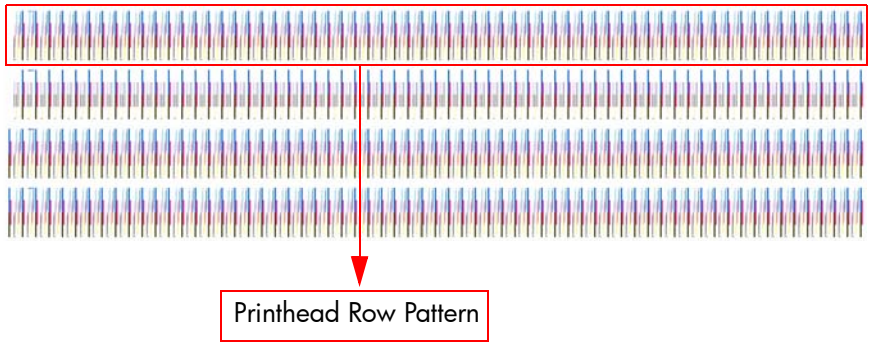
4 The Printer will start printing the Printhead Adjustment pattern and the following message will appear on the Front Panel.

```
# PH ADJ PRINTS
* EXECUTING
```

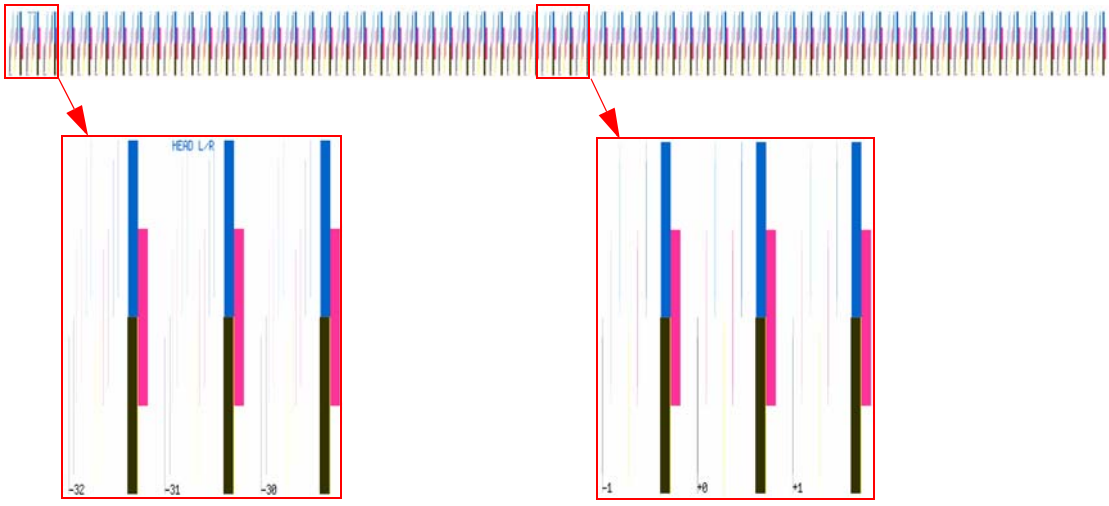
Perform Printhead Position Correction

Once you have printed the Printhead Adjustment pattern, you can use it to correct the position of the Printhead as follows:

1 Locate the Printhead Row pattern in the Printhead Adjustment pattern.



2 Select the pattern that looks the best aligned and note down the value (either a - value or a + value).



Lines **not** well aligned

Lines well aligned

3 In the Printhead Adjustment submenu, scroll to "PH Row Val" and press the ▶ key.

```
# PH ROW VAL
# Lm
```

4 In the PH Row Val submenu, select the color of the Printhead that you would like to adjust and press the **OK** key. If you would like to exit the PH Row Val submenu, press the ◀ key.

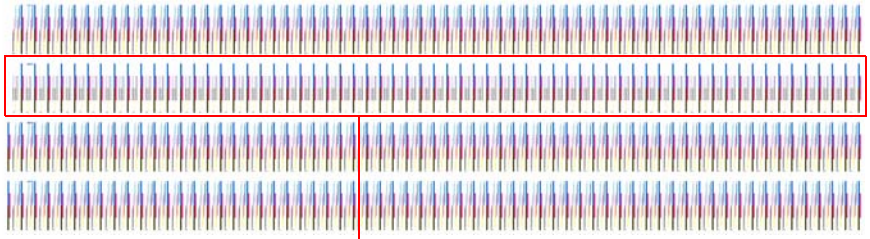
```
# PH ROW VAL
> Lm   >+00
```

5 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. Enter the value that you noted down in step 2.

```
# PH ROW VAL
> Lm   >+01
```

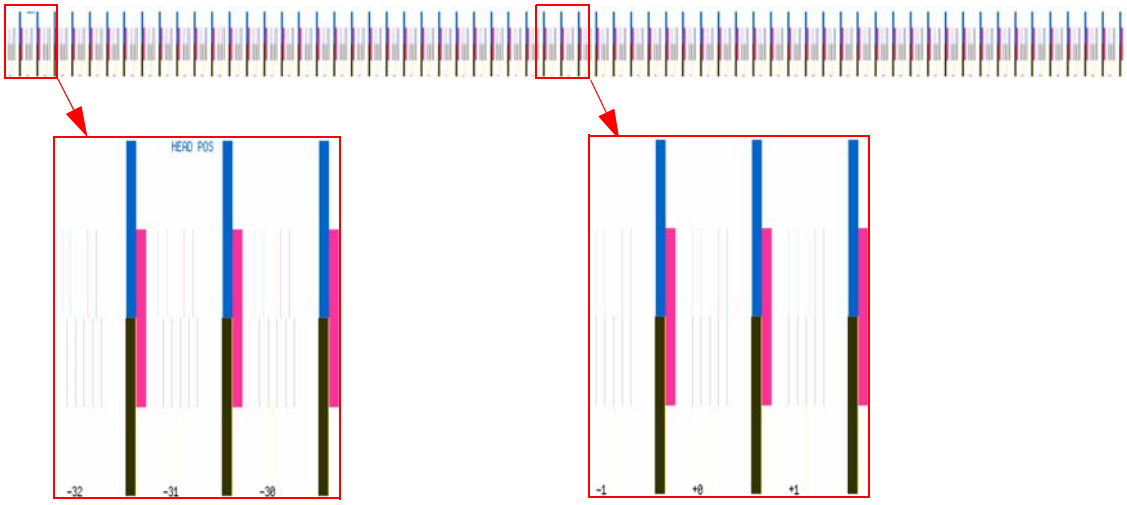
6 Press the **OK** key once you have entered the new value.

7 Locate the Printhead to Printhead pattern in the Printhead Adjustment pattern.



Printhead to Printhead Pattern

8 Select the pattern that looks the best aligned and note down the value (either a - value or a + value).



Lines **not** well aligned

Lines well aligned

9 In the Printhead Adjustment submenu, scroll to "PH to PH Val" and press the ▶ key.

```
# PH TO PH VAL
# Lm
```

10 In the PH to PH Val submenu, select the color of the Printhead that you would like to adjust and press the **OK** key. If you would like to exit the PH to PH Val submenu, press the ◀ key.

```
# PH TO PH VAL
> Lm   >+00
```

11 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. Enter the value that you noted down in step 8.

```
# PH TO PH VAL
> Lm   >+01
```

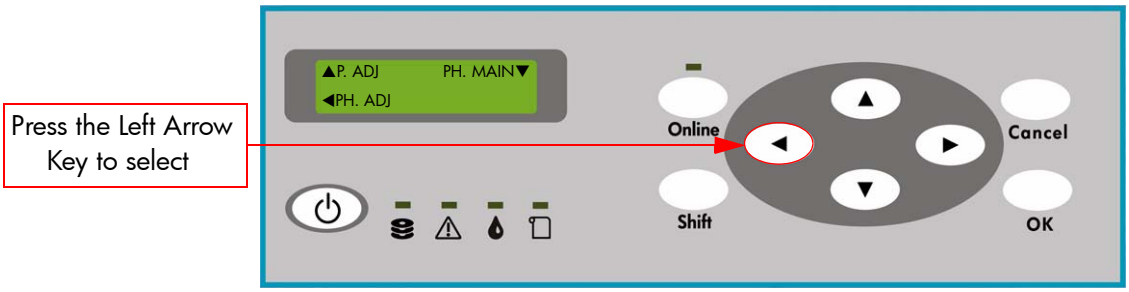
12 Press the **OK** key once you have entered the new value.

Print the Check Printhead Pattern

In order to adjust the Printhead, you must first print the Check Printhead pattern as follows:

1 Enter in to the Maintenance Mode ⇒ Page *4-7*.

2 Press the ◀ key to enter in to the Printhead Adjustment menu.



1 In the Printhead Adjustment submenu, scroll to "PH Adj Prints" and press the **OK** key.

```
# PH ADJ PRINTS
> NOZZLE CHECK
```

2 In the Printhead Adjustment Prints submenu, scroll to "Check Printhead" and press the **OK** key.

```
# PH ADJ PRINTS
* CHECK PRINTHEAD
```

3 You will need to confirm that you want to print the Check Printhead pattern by pressing the **OK** key.

```
# PH ADJ PRINTS
* CHECK PRINTHEAD  OK?
```

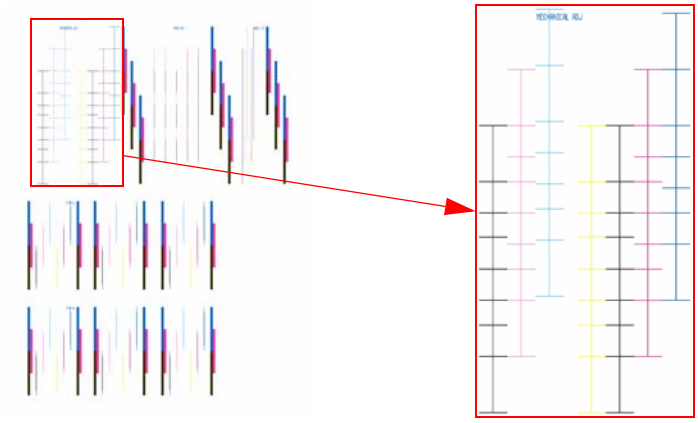
4 The Printer will start printing the Check Printhead pattern and the following message will appear on the Front Panel.

```
# PH ADJ PRINTS
* EXECUTING
```

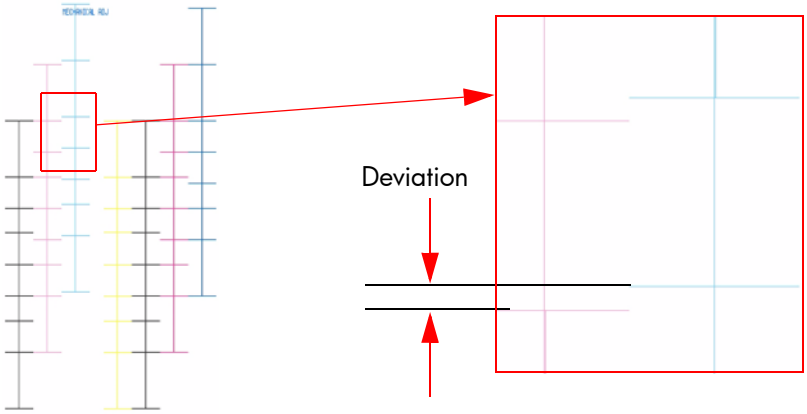
Adjust the Printhead

Once you have printed the Check Printhead pattern, you can use it to adjust the Printhead as follows:

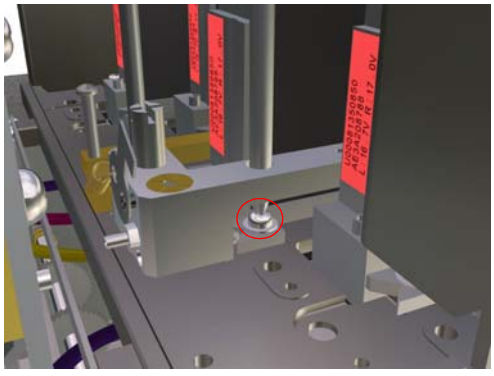
1 Locate the mechanical adjustment pattern in the Check Printhead pattern.



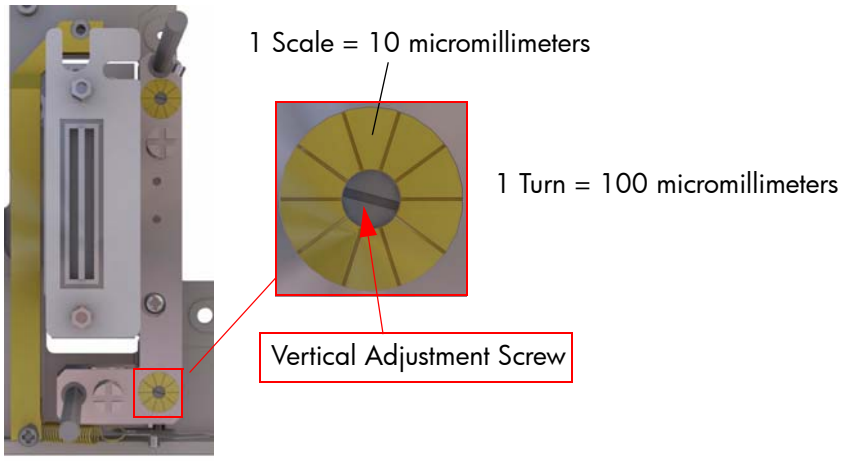
2 Using a Measuring Loupe, you must first measure the deviation of the Printhead in the vertical position.



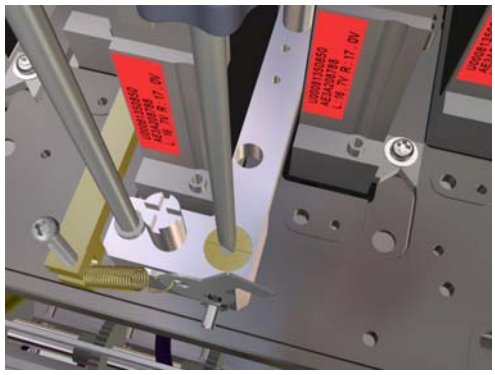
3 Loosen the front screw that secures the Printhead to the Carriage Base Plate.



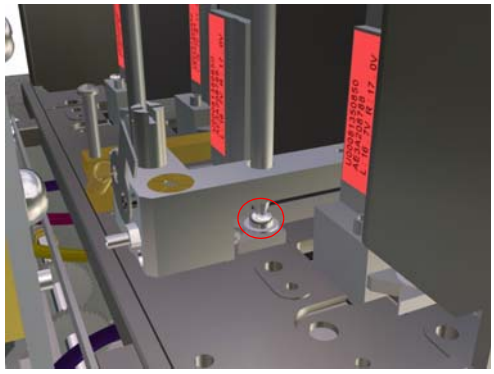
4 Using the measurement obtained in step 2, calculate how many scales you will need to turn the Vertical Adjustment Screw to adjust the vertical position of the Printhead.



5 If for example, the deviation measured in step 2 was 240 micro-millimeters, you would turn the Vertical Adjustment Screw 2 full turns and 4 scales.

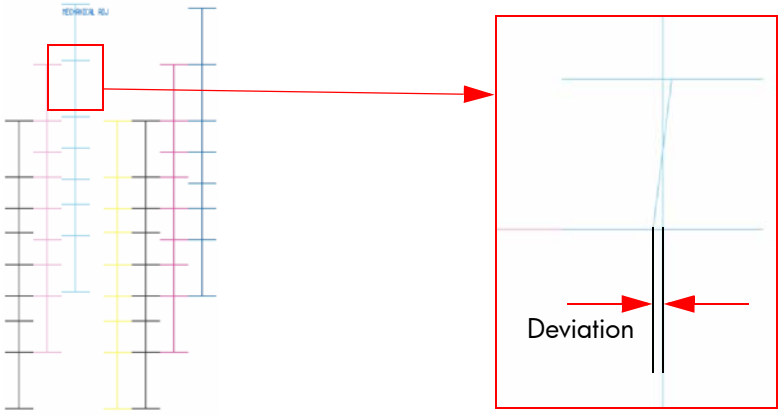


6 Tighten the front screw that secures the Printhead to the Carriage Base Plate.

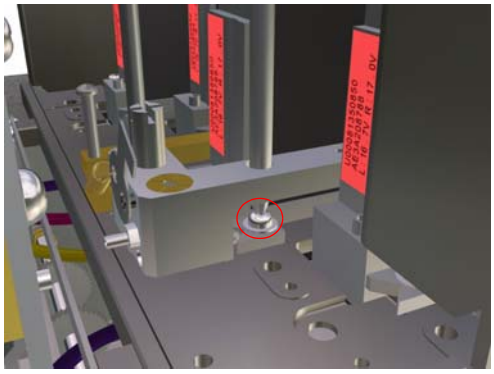


7 Reprint the Check Printhead pattern and measure again the deviation of the Printhead in the vertical position. If there is still deviation, repeat the instructions from step 3.

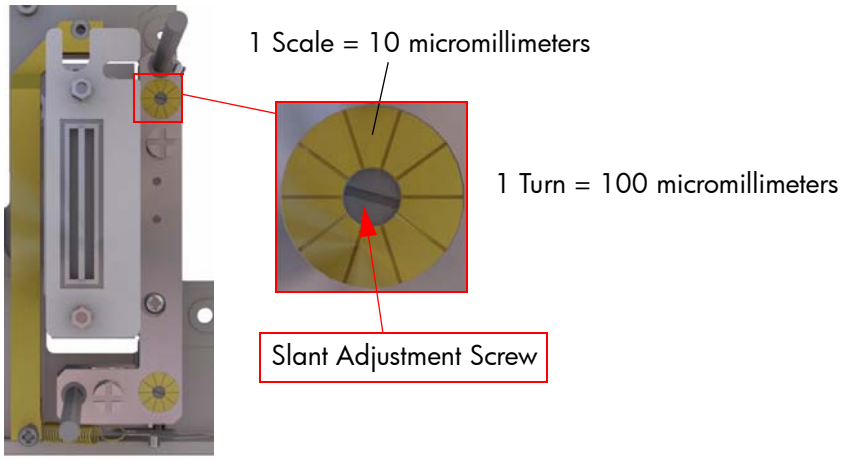
8 If the deviation measured is 0, you will now measure the deviation of the Printhead in the slant position.



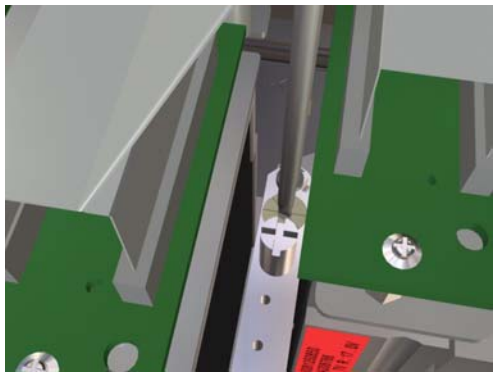
9 Loosen the front screw that secures the Printhead to the Carriage Base Plate.



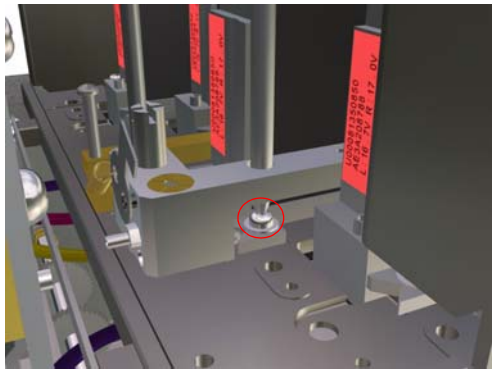
10 Using the measurement obtained in step 8, calculate how many scales you will need to turn the Slant Adjustment Screw to adjust the slant position of the Printhead.



11 If for example, the deviation measured in step 8 was 120 micro-millimeters, you would turn the Slant Adjustment Screw 1 full turn and 2 scales.

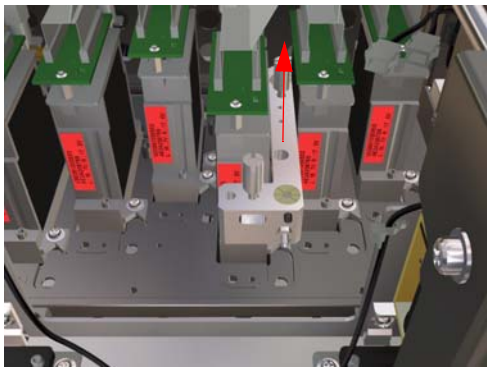


12 Tighten the front screw that secures the Printhead to the Carriage Base Plate.



13 Reprint the Check Printhead pattern and measure again the deviation of the Printhead in the slant position. If there is still deviation, repeat the instructions from step 9.

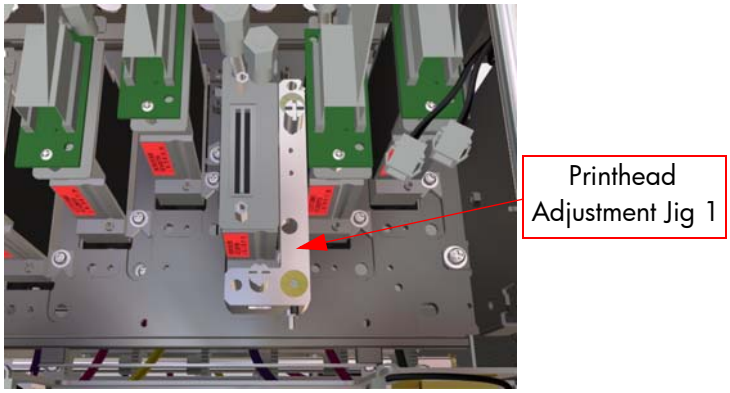
14 If the deviation measured is 0, you can remove the Printhead Adjustment Jigs from the Carriage.



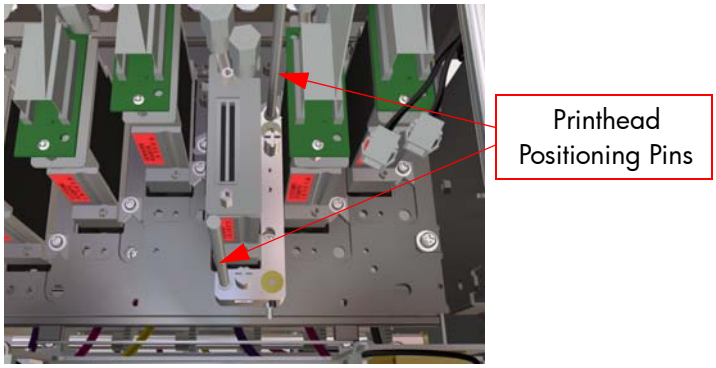
Tip to Speed-Up the Printhead Adjustment

An alternative and faster way to adjust a new Printhead is as follows:

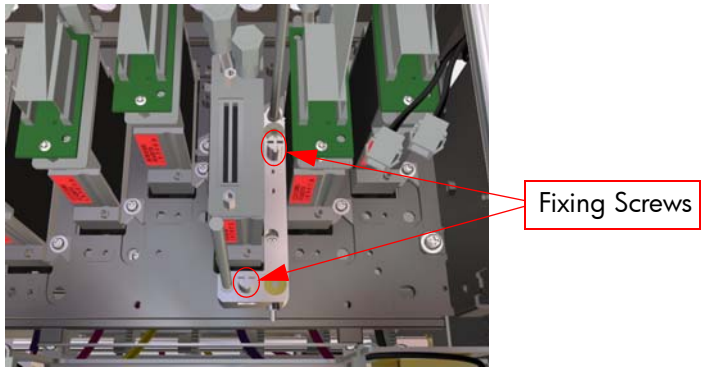
1 Before removing the **old** Printhead, install the Printhead Adjustment Jig 1 in to position against the Carriage Base Plate.



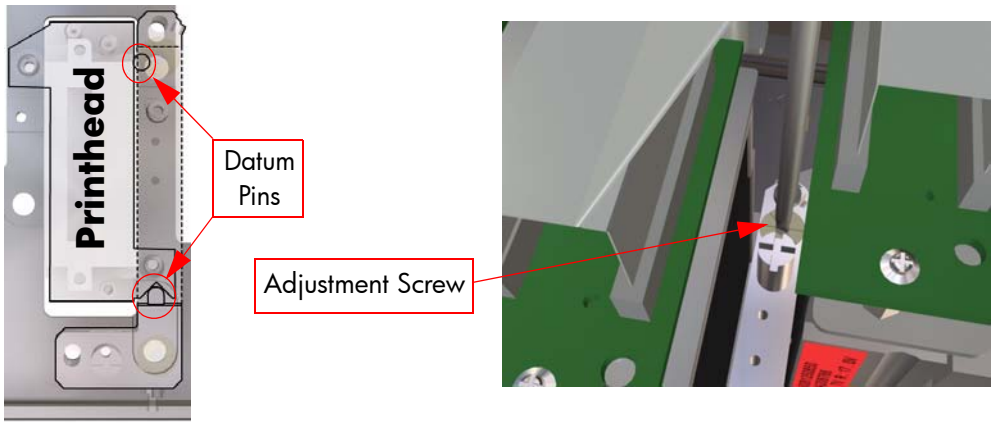
2 Insert the two Printhead Positioning Pins into the Printhead Adjustment Jig 1.



3 Tighten the two fixing screws so that the Printhead Adjustment Jig 1 is securely attached to the Carriage Base Plate.

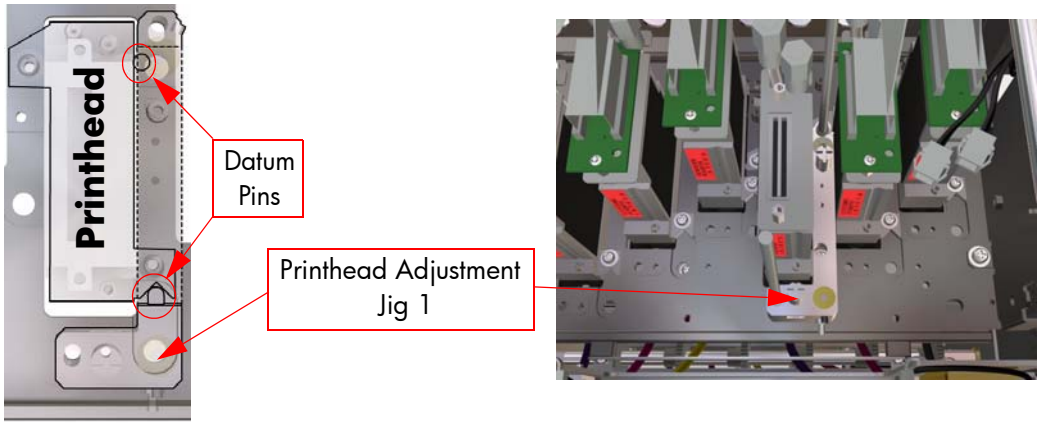


4 Turn both Adjustment Screws so that the 2 datum pins touch the Printhead as shown. You must **not** force the Adjustment Screws too much as this could damage the Datum Pins.

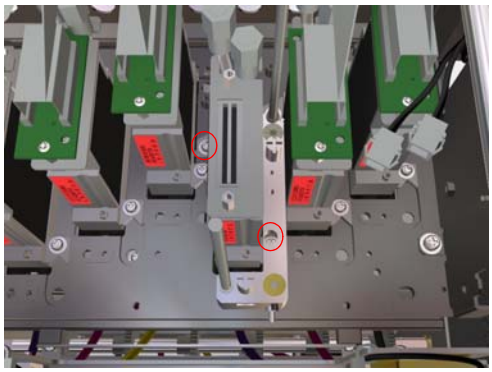


5 Now that the Printhead Adjustment Jig 1 is calibrated to the **old** Printhead, the Printhead can now be removed ⇒ Page *8-86*.

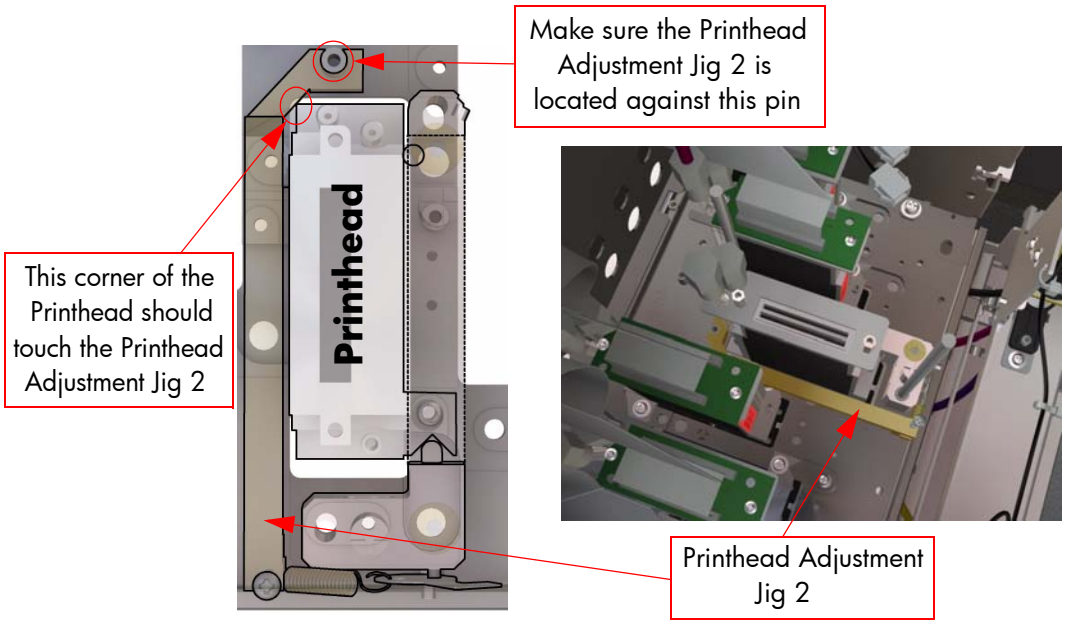
6 Install a **new** Printhead in to the Carriage and position it against the Printhead Adjustment Jig 1 as shown. Make sure that the 2 datum pins touch the Printhead as shown.



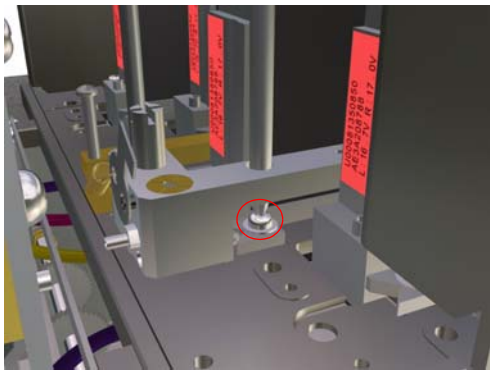
7 Install the two screws to secure the Printhead. The screws should **not** be tightened too much, just enough so that the Printhead does not move loosely.



8 Install the Printhead Adjustment Jig 2 in to position against the Carriage Base Plate.


Make sure the Printhead Adjustment Jig 2 is located against this pin
This corner of the Printhead should touch the Printhead Adjustment Jig 2
Printhead
Printhead Adjustment Jig 2

9 Tighten the front screw that secures the Printhead to the Carriage Base Plate.



10 At this point the **new** Printhead should now be more or less in the same position as the **old** Printhead.

11 Before continuing, you should connect the Ink Tube and Printhead Connector Assembly to the Printhead.

12 You should now continue the Printhead Adjustment procedure from Page *3-9*.

Maintenance Mode 4

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Maintenance Mode

Introduction

This chapter explains how to use the built-in Maintenance Mode which is designed to assist Service Personnel to make any necessary factory adjustments or to perform Service Tests to verify if certain components of the Printer are functioning correctly.

If possible, always perform a Service Test on the component that you are about to replace, just to make sure that is the component that has failed. If the test on that component passes, there is no need to replace it.

Diagnostics - Self Test

Initialization Sequences

Whenever the Printer is switched ON, it automatically performs a series of internal self tests and mechanical initialization sequences. If any of the parts fail, a system error will appear and you should consult Chapter 2 - *System Error Codes*.

Phone Support

In certain circumstances, a Call Agent can try and troubleshoot the Printer by requesting the Customer to perform a Service Test via the phone. Using this process, it can be determined whether the Printer requires any on-site maintenance.

Maintenance Mode Menus

The following is a list of all internal Maintenance Mode Menus available in the Printer. Instructions for entering the Maintenance Mode are explained on Page *4-7*.

1 P. ADJ. (Printer Adjustment) ⇒ Page *4-10*

This menu contains the necessary options to set the adjustment parameters of the Printer so that it functions correctly. The different options available in this menu are as follows:

- Adjust Print.
- Meda Advance Print.
- Manufacturing Print 1.
- Cap Position.
- Wipe Position.
- Line Sensor (Top) Adjustment.
- Line Sensor (Side) Adjustment.
- Media Advance Value.
- Back Adjust Print.
- Back Adjust Value.

2 PH. ADJ. (Printhead Adjustment) ⇒ Page *4-17*

This menu contains the necessary options to set the adjustment parameters of the Printhead so that it functions correctly. The different options available in this menu are as follows:

- Printhead Adjustment Prints.
- Move Carriage.
- Printhead Row Value.
- Printhead to Printhead Value.
- Set Bidirection Media.
- Bidirection Definitions.
- Drive Voltage.
- Manufacturing Print 2.

3 PH. MAIN. (Printhead Maintenance) ⇒ Page *4-23*

This menu contains the necessary options related to the actual Printheads contained in the Carriage Assembly, like cleaning or servicing. The different options available in this menu are as follows:

- Charge Ink System.
- Purge Ink System.
- Ink System Options.
- Ink Charge Done.
- Printhead Recovery.
- Uncap Carriage.
- Cap Carriage.

4 MNFG-PRN. (Manufacturing Test Patterns) ⇒ Page *4-44*

This menu contains the test patterns which are used during the manufacturing process.

5 SETUP ⇒ Page *4-45*

This menu contains the necessary option to set the different system parameters, like language or system time. The different options available in this menu are as follows:

- Language.
- Beeper Settings.
- System Date.
- System Time.
- Serial Number.
- NVRAM Initialization.
- Save Calibrations.
- Restore Calibrations.
- Save NVRAM.
- Restore NVRAM.
- Boot Version.
- Printer Firmware Version.
- Main PCA Version.
- Carriage PCA Version.
- ASIC Version.
- Heater Hardware Version.
- Heater Firmware Version.
- Heater Upgrade.
- Install Done.

6 FEED ⇒ Page *4-52*

This option allows you to feed the paper manually in to the Printer.

7 SENSORS ⇒ Page *4-53*

This menu can be used to check the status of the various sensors and thermistors in the Printer in real time. The different options available in this menu are as follows:

- Printer Sensors.
- Ink Sensor.
- Sub Tank Sensor.
- Bottle Sensor.
- TUR Sensors.
- Temperature Sensors.

8 ELECT (Electronics) ⇒ Page *4-59*

This menu contains the necessary diagnostics that can be used to test the various electronic components in the Printer. The different options available in this menu are as follows:

- Flash ROM.
- PIO.
- NVRAM.
- Ink EEPROM.
- ATG.
- DRAM.
- RSM.
- PTC.
- PDD.
- ALL.
- VDD.
- Front Panel.

9 VOLT (Voltage Check) ⇒ Page *4-69*

This menu can be used to turn the Voltage check to high or low. The different options available in this menu are as follows:

- Voltage Check.

10 MOTORS ⇒ Page *4-70*

This menu contains the necessary diagnostics that can be used to test the various Motors in the Printer. The different options available in this menu are as follows:

- Media Advance Motor.
- Capping Station Motor.
- Wiping Station Motor.
- Solenoid (Left or Right).
- Vacuum Fans (Left, Right or Center).
- Exhaust Fans.
- Printhead Cooling Fan.
- TUR Motor.
- Pump Motors.

11 SYSTEM INF ⇒ Page *4-77*

This menu can be used to print various information pages. The different options available in this menu are as follows:

- System Print.
- Error Log Print.
- History Print.

12 COUNTER ⇒ Page *4-79*

This menu can be used to view and set the different paper lengths used in the Printer. The different options available in this menu are as follows:

- Media Used.
- Prime Assembly.
- Pump Tube.
- Wiper Cleaning.
- Wiper Belt.
- Wiper Blade.
- Capping Unit.
- Scan-Axis belt.
- Non-HP Ink Used.
- Expired Ink Used.

13 Heater Panel Maintenance Mode ⇒ Page *4-87*

The Heater Panel has a separate Maintenance Mode which can used to set certain parameters.

Entering the Maintenance Mode

Enter in to the Maintenance Mode as follows:

1. When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

2. When the following screen is displayed on the Front Panel, press the following keys in this order: **Cancel**, **Shift**, **Cancel**, **Cancel**.

3. When the following screen is displayed on the Front Panel, you will be requested to enter a password. Press the following keys in this order: ◀, ▶, **Shift** and **OK**.

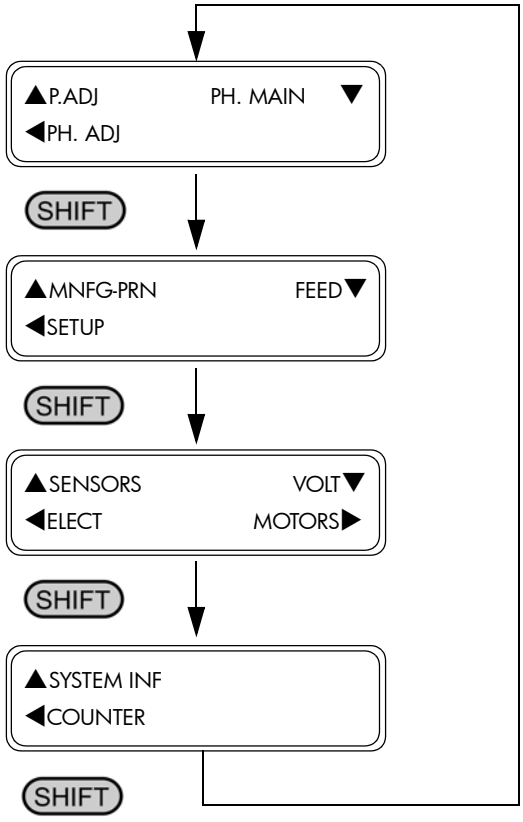
4. Once the password has been entered correctly, you will enter in to the Maintenance Mode.

Basic Menu Operation

Menu Group Selection

You can select a menu group directly with the ▲, ▼, ◀ and ▶ keys.

In order to switch between the different Maintenance Mode menus, the **Shift** key has to be used. The order of the different menus is as follows:



Menu Selection

Use the ▲ and ▼ keys to change between the menus at the same level.

Use the ◀ key to move to a higher level menu and use the ▶ key to move to a lower level menu.

Use the **OK** key to select a menu.

Parameter Setting

Use the ▲ and ▼ keys to switch between the parameters and to change the value of the digits.

Use the ◀ and ▶ keys to move between the digits when entering a parameter.

Use the **OK** key to confirm the parameter.

Use the **Cancel** key to cancel the parameter (without changing it) and return to the menu selection level.

Exiting Maintenance Mode

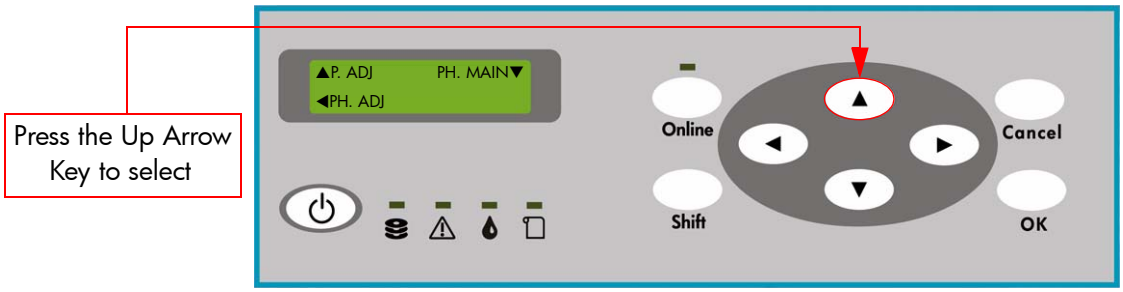
Use the **Online** key at anytime to immediately exit the Maintenance Mode.

P. ADJ. (Printer Adjustment)

This menu contains the necessary options to set the adjustment parameters of the Printer so that it functions correctly. The different options available in this menu are as follows:

- Adjust Print ⇒ Page *4-10*.
- Media Advance Print ⇒ Page *4-11*.
- Manufacturing Print 1 ⇒ Page *4-12*.
- Cap Position ⇒ Page *4-13*.
- Wipe Position ⇒ Page *4-13*.
- Line Sensor Adjust Top Value ⇒ Page *4-14*.
- Line Sensor Adjust Side Value ⇒ Page *4-14*.
- Media Advance Value ⇒ Page *4-15*.
- Back Adjust Print ⇒ Page *4-15*.
- Back Adjust Value ⇒ Page *4-16*.

To enter in to the Printer Adjustment menu, enter in to the Maintenance Mode and press the ▲ key.



Adjust Print

This option allows you to print an adjustment print that is then used to calibrate the Line Sensor:

1 In the Printer Adjustment submenu, scroll to "Adjust Print" and press the **OK** key.

```
# ADJUST PRINT
> LS ADJ PRINT
```

2 In the Adjust Print submenu, scroll to "LS Adj Print" and press the **OK** key.

```
# ADJUST PRINT
* LS ADJ PRINT
```

3 You will need to confirm that you want to print the Adjust Print by pressing the **OK** key.

```
# ADJUST PRINT
* OK?
```

4 The Printer will start printing the Adjust Print and the following message will appear on the Front Panel.

```
# ADJUST PRINT
* EXECUTING
```

5 After printing the Adjust Print, you will need to enter the values (if necessary) for the Line Sensor adjustment ⇒ Page *4-14*.

Media Advance Print

This option allows you to print the media advance pattern which is then used to calibrate the media advance for the different media used in the printer:

Always set the Take-up-reel to Tension Mode when performing the Media Advance adjustment.

1 In the Printer Adjustment submenu, scroll to "Media Adv Print" and press the **OK** key.

```
# MEDIA ADV PRINT
> ROUGH (NORMAL)
```

2 In the Media Adv Print submenu, scroll to "Rough (Normal)" and press the **OK** key.

```
# MEDIA ADV PRINT
* ROUGH (NORMAL)
```

The other Media Advance Prints available in this menu are as follows:

- Rough (Normal) - Prints the paper feed adjustment pattern every 0.25% in the 99.0 to 101.1% range (Standard 4-pass printmode).
- Rough (H-Qual) - Prints the paper feed adjustment pattern every 0.25% in the 99.0 to 101.1% range (High Quality 8-pass printmode).
- Rough (H-Dens) - Prints the paper feed adjustment pattern every 0.25% in the 99.0 to 101.1% range (High Density 8-pass printmode).
- Rough (Draft) - Prints the paper feed adjustment pattern every 0.25% in the 99.0 to 101.1% range (Draft 2-pass printmode).
- Detail (Normal) - Prints the paper feed adjustment pattern every 0.06% in the current setting value ± 0.12% range (Standard 4-pass printmode).
- Detail (H-Qual) - Prints the paper feed adjustment pattern every 0.06% in the current setting value ± 0.12% range (High Quality 8-pass printmode).
- Detail (H-Dens) - Prints the paper feed adjustment pattern every 0.06% in the current setting value ± 0.12% range (High Density 8-pass printmode).
- Detail (Draft) - Prints the paper feed adjustment pattern every 0.06% in the current setting value ± 0.12% range (Draft 2-pass printmode).
- **Detail 2** prints are only used in the Manufacturing process, so should not be used.

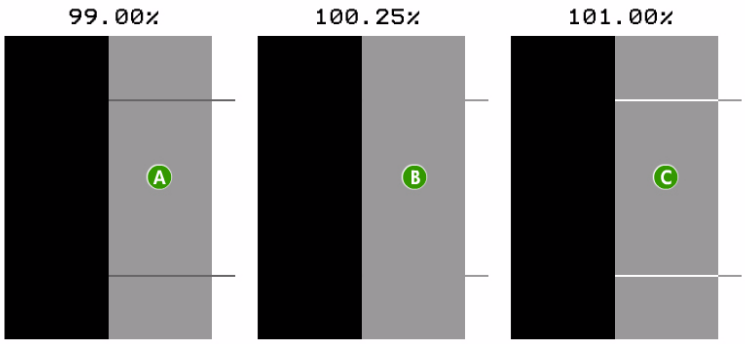
3 You will need to confirm that you want to print the selected Media Advance print by pressing the **OK** key.

```
# MEDIA ADV PRINT
* OK?
```

4 The Printer will start printing the selected Media Advance Print and the following message will appear on the Front Panel. You can press the **Cancel** key at any time to stop printing.

```
# MEDIA ADV PRINT
* EXECUTING
```

5 The Media Advance Print will show 9 patterns printed in 0.25% steps in a range from 99.00% to 101.00% (example shown using Black color).



A Dark lines are visible, so the value is too low.

B No line are visible, so the value is correct.

C Light lines are visible, so the value is too high.

6 From the printed pattern, select the best media advance calibration value.

7 Enter the "Media Adv Value" submenu and enter the value selected in the previous step ⇒ Page *4-15*.

8 Repeat the process from step 2, but this time selecting "Detail (Normal)" instead.

```
# MEDIA ADV PRINT
* DETAIL (NORMAL)
```

Manufacturing Print 1

This option is ONLY used for manufacturing purposes.

Cap Position

This option allows you to correct the value of the capping position:

Please refer to the instructions on Page *5-25* for the full instructions on how to calibrate the capping position.

1 In the Printer Adjustment submenu, scroll to "Cap Position" and press the **OK** key.

```
# CAP POSITION
> +0.0 mm
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of -5.0 to +5.0 mm.

```
# CAP POSITION
* +0.3 mm
```

3 Press the **OK** key once you have entered the new value.

Wipe Position

This option allows you to correct the value of the wiping position:

Please refer to the instructions on Page *5-23* for the full instructions on how to calibrate the wiping position.

1 In the Printer Adjustment submenu, scroll to "Wipe Position" and press the **OK** key.

```
# WIPE POSITION
> +0.0 mm
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of -5.0 to +5.0 mm.

```
# WIPE POSITION
* -0.5 mm
```

3 Press the **OK** key once you have entered the new value.

Line Sensor Adjust Top Value

This option allows you to correct the value for the Line Sensor (top margin position), according to the print results of the Adjust Print:

Please refer to the instructions on Page *5-28* for the full instructions on how to calibrate the Line Sensor Top Margin.

1 In the Printer Adjustment submenu, scroll to "LS Adj Top Val" and press the **OK** key.

```
# LS ADJ TOP VAL
> +0.0 mm
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of -5.0 to +5.0 mm.

```
# LS ADJ TOP VAL
* +0.8 mm
```

3 Press the **OK** key once you have entered the new value.

Line Sensor Adjust Side Value

This option allows you to correct the value for the Line Sensor (side margin position), according to the print results of the Adjust Print:

Please refer to the instructions on Page *5-27* for the full instructions on how to calibrate the Line Sensor Side Margin.

1 In the Printer Adjustment submenu, scroll to "LS Adj Side Val" and press the **OK** key.

```
# LS ADJ SIDE VAL
> +0.0 mm
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of -5.0 to +5.0 mm.

```
# LS ADJ SIDE VAL
* +1.1 mm
```

3 Press the **OK** key once you have entered the new value.

Media Advance Value

This option allows you to enter the media advance value which is needed to calibrate the media advance for the different media used in the printer:

Do NOT change the MNFG value as this is ONLY used during the manufacturing process.

1 In the Printer Adjustment submenu, scroll to "Media Adv Value" and press the ▶ key.

```
# MEDIA ADV VALUE
# MNFG
```

2 In the Media Adv Value submenu, select the media that you would like to correct and press the **OK** key. If you would like to exit the Media Adv Value submenu, press the ◀ key.

```
# MEDIA ADV VALUE
> PAPER   >099.80%
```

3 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of 097.00% to 103.00%.

```
# MEDIA ADV VALUE
> PAPER   >098.40%
```

4 Press the **OK** key once you have entered the new value.

Back Adjust Print

This option allows you to print an adjustment pattern so that the media back feed can be mechanically adjusted:

1 In the Printer Adjustment submenu, scroll to "Back Adj Print" and press the **OK** key.

```
# BACK ADJ PRINT
> NORMAL
```

2 In the Back Adj Print submenu, scroll to the pattern that you would like to print and press the **OK** key.

```
# BACK PATTERN
* NORMAL
```

The Back Adjust patterns available in this menu are as follows:

- Normal - Prints using a Standard 4-pass printmode.
- H-Quality - Prints using a High Quality 8-pass printmode.
- H-Density - Prints using a High Density 8-pass printmode.
- Draft - Prints using a Draft 2-pass printmode.

3 You will need to confirm that you want to print the selected Back Adjust pattern by pressing the **OK** key.

```
# BACK ADJ PRINT
* NORMAL   OK?
```

4 The Printer will start printing the selected Back Adjust pattern and the following message will appear on the Front Panel.

```
# BACK ADJ PRINT
* EXECUTING
```

Back Adjust Value

Do NOT change the MNFG value as this is ONLY used during the manufacturing process.

This option allows you to correct the media back feed value based on the back adjust print:

1 In the Printer Adjustment submenu, scroll to "Back Adj Value" and press the ▶ key.

```
# BACK ADJ VALUE
# MNFG
```

2 In the Back Adj Value submenu, select the media that you would like to correct and press the **OK** key. If you would like to exit the Back Adj Value submenu, press the ◀ key.

```
# BACK ADJ VALUE
> PAPER   >+0000P
```

3 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of ±2000P (±5 mm). 1 pulse = 2.5 micromillimeters.

```
# BACK ADJ VALUE
> PAPER   >0100P
```

4 Press the **OK** key once you have entered the new value.

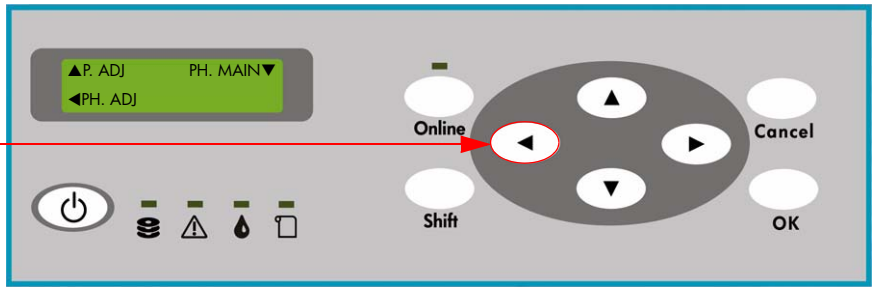
PH. ADJ (Printhead Adjustment)

This menu contains the necessary options to set the adjustment parameters of the Printhead so that it functions correctly. The different options available in this menu are as follows:

- Printhead Adjustment Prints ⇒ Page *4-17*.
- Move Carriage ⇒ Page *4-18*.
- Printhead Row Value ⇒ Page *4-19*.
- Printhead to Printhead Value ⇒ Page *4-19*.
- Set Bidirection Media ⇒ Page *4-20*.
- Bidirection Definitions ⇒ Page *4-21*.
- Printhead Voltage ⇒ Page *4-22*.
- Manufacturing Print 2 ⇒ Page *4-22*.

To enter in to the Printhead Adjustment menu, enter in to the Maintenance Mode and press the ◀ key.

Press the Left Arrow Key to select



Printhead Adjustment Prints

This option allows you to print the different adjustment patterns that need to be used to adjust the Printhead:

1 In the Printhead Adjustment submenu, scroll to "PH. Adj Prints" and press the **OK** key.

```
# PH. ADJ PRINTS
> NOZZLE CHECK
```

2 In the Printhead Adjustment Prints submenu, scroll to the pattern that you would like to print and press the **OK** key.

```
# PH. ADJ PRINTS
* NOZZLE CHECK
```

The Printhead Adjustment Prints available in this menu are as follows:

- Nozzle Check - Prints a nozzle check pattern that can be used to determine which nozzles are missing (if any).
- Printhead Adj - Prints a Printhead adjustment pattern that can be used to adjust the printhead (used when installing a new Printhead).
- Check Printhead - Prints a Printhead adjustment check pattern.
- PH Row - Prints a Printhead alignment pattern.

- PH to PH - Prints a Printhead to Printhead alignment pattern.
- Bidirection Def - Prints a Bi-directional adjustment pattern.
- Bidirection F.D - Prints a Bi-directional adjustment pattern for the Fine Draft print mode.
- Check PH to PH - Prints a Printhead to Printhead check pattern
- Check Bidir Def - Prints a Bi-directional check pattern.
- Check Bidir F.D - Prints a Bi-directional check pattern for the Fine Draft print mode.

3 You will need to confirm that you want to print the selected printhead Adjustment Pattern by pressing the **OK** key.

```
# PH. ADJ PRINT
* NOZZLE CHECK  OK?
```

4 The Printer will start printing the selected Printhead Adjustment Pattern and the following message will appear on the Front Panel.

```
# PH. ADJ PRINT
* EXECUTING
```

Move Carriage

This option allows you to move the Carriage when adjusting the Printhead:

1 In the Printhead Adjustment submenu, scroll to "Move Carriage" and press the **OK** key.

```
# MOVE CARRIAGE
> HOME
```

2 In the Move Carriage submenu, scroll to the position that you would like the Carriage to move to and press the **OK** key.

```
# MOVE CARRIAGE
* HOME
```

The positions that the Carriage can move to are as follows:

- Home - Moves the Carriage to the home position.
- Cap - Moves the Carriage to the capping position.
- Center - Moves the Carriage to the center of the Printer.
- Wipe - Moves the Carriage to the wiping position.

3 You will need to confirm that you want to move the Carriage to the selected position by pressing the **OK** key.

```
# MOVE CARRIAGE
* WIPE   OK?
```

Printhead Row Value

This option allows you to adjust the left and right position of each Printhead by entering the correction values according to the results obtained from the Printhead Adjustment Print:

1 In the Printhead Adjustment submenu, scroll to "PH Row Val" and press the ▶ key.

```
# PH ROW VAL
# BK
```

2 In the PH Row Val submenu, select the color of the Printhead that you would like to adjust and press the **OK** key. If you would like to exit the PH Row Val submenu, press the ◀ key.

```
# PH ROW VAL
> K   >+00
```

The different colors of the Printheads are as follows:

- K - Black.
- Lm - Light Magenta.
- Lc - Light Cyan.
- M - Magenta.
- Y - Yellow.
- C - Cyan.

3 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The numerical value can be changed in a range of -32 to +31 (1 unit = 1 dot).

```
# PH ROW VAL
> Lc   >+04
```

4 Press the **OK** key once you have entered the new value.

Printhead to Printhead Value

This option allows you to adjust the Printhead position in the main scanning direction of each head by entering the correction values according to the results obtained from the Printhead Adjustment Print:

1 In the Printhead Adjustment submenu, scroll to "PH to PH Val" and press the ▶ key.

```
# PH TO PH VAL
# Lm
```

2 In the PH to PH Val submenu, select the color of the Printhead that you would like to adjust and press the **OK** key. If you would like to exit the PH to PH Val submenu, press the ◀ key.

```
# PH TO PH VAL
> Lm   >+00
```

The different colors of the Printheads are as follows:

- Lm - Light Magenta.
- Lc - Light Cyan.
- M - Magenta.
- Y - Yellow.
- C - Cyan.

3 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The numerical value can be changed in a range of -32 to +31 (1 unit = 1 dot).

```
# PH TO PH VAL
> Lm   >+03
```

4 Press the **OK** key once you have entered the new value.

Set Bidirection Media

Do NOT use the MNFG value as this is ONLY used during the manufacturing process.

This option allows you to select the target media that will be used to adjust the Bidirectional values (media selected here will be used in the Bidirection Definition):

1 In the Printhead Adjustment submenu, scroll to "Set Bidir Media" and press the **OK** key.

```
# SET BIDIR MEDIA
> MNFG
```

2 In the Set Bidir Media submenu, scroll to the media that you would like to use for Bidirection adjustment and press the **OK** key.

```
# SET BIDIR MEDIA
* PAPER
```

Bidirection Definition

The example on this page explains how to enter the correction values for the left Bidirection position. Use the same procedure in order to correct the right Bidirection value and the Bidirection values for Fine Draft (left and right positions).

This option allows you to adjust the left Bidirection position of each head for the selected media by entering the correction values according to the results obtained from the Printhead Adjustment Print:

1 In the Printhead Adjustment submenu, scroll to "Bi-Def/L xxxxxx" and press the ▶ key.

```
# BI-DEF/L xxxxxx
# K
```

2 In the Bi-Def/L submenu, select the color of the Printhead that you would like to adjust and press the **OK** key. If you would like to exit the Bi-Def/L submenu, press the ◀ key.

```
# BI-DEF/L xxxxxx
> K   >+00
```

xxxxxx = media selected in "Set Bidir Media"

The different colors of the Printheads are as follows:

- K - Black.
- Lm - Light Magenta.
- Lc - Light Cyan.
- M - Magenta.
- Y - Yellow.
- C - Cyan.

3 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The numerical value can be changed in a range of -32 to +31 (1 unit = 1 dot).

```
# BI-DEF/L xxxxxx
> K   >+02
```

4 Press the **OK** key once you have entered the new value.

Printhead Voltage

This option allows you to enter the drive voltage value for each Printhead:

You MUST enter the drive voltage value of a new Printhead after installing it, or else it will NOT print correctly. Remember to set BOTH the left and right values for each Printhead.

1 In the Printhead Adjustment submenu, scroll to "PH Voltage" and press the ▶ key.

```
# PH VOLTAGE
# K (L)
```

2 In the PH Voltage submenu, select the color of the Printhead (either left or right) for which you would like to set the Printhead Voltage and press the **OK** key. If you would like to exit the PH Voltage submenu, press the ◀ key.

```
# PH VOLTAGE
> Lc (L)   >16.0 V
```

The different colors of the Printheads are as follows:

- K - Black.
- Lm - Light Magenta.
- Lc - Light Cyan.
- M - Magenta.
- Y - Yellow.
- C - Cyan.

3 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits. The value can be changed in a range of 12.0 to 20.0 V (in increments of 0.1 V).

```
# PH VOLTAGE
> Lc (L)   >16.6 V
```

4 Press the **OK** key once you have entered the new value.

Manufacturing Print 2

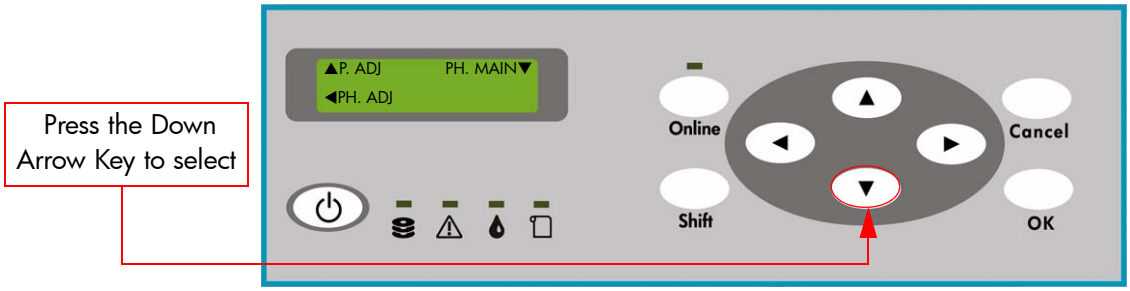
This option is ONLY used for manufacturing purposes.

PH. MAIN (Printhead Maintenance)

This menu contains the necessary options related to the actual Printheads contained in the Carriage Assembly, like cleaning or servicing. The different options available in this menu are as follows:

- Charge Ink System ⇒ Page *4-23*.
- Purge Ink System ⇒ Page *4-25*.
- Ink System Options:
  - Store Ink System ⇒ Page *4-27*.
  - Clean Ink System ⇒ Page *4-33*.
- Ink Charge Done ⇒ Page *4-42*.
- Printhead Recovery ⇒ Page *4-42*.
- Uncap Carriage ⇒ Page *4-43*.
- Cap Carriage ⇒ Page *4-43*.

To enter in to the Printhead Maintenance menu, enter in to the Maintenance Mode and press the ▼ key.



Charge Ink System

This option allows you to charge the complete ink system (e.g. when the Ink Tubes are empty) or individual inks (e.g. after replacing a Printhead):

1 In the Printhead Maintenance submenu, scroll to "Charge Ink Sys" and press the **OK** key.

```
# CHARGE INK SYS
> ALL
```

2 In the Charge Ink System submenu, select whether you would like to charge the complete Ink System, part of the Ink System or individual inks and then press the **OK** key.

```
# CHARGE INK SYS
* ALL
```

The different options available in this submenu are as follows:

- ALL - Charges the complete Ink System.
- Left (K, Lm, Lc) - Charges the Black, Light Magenta and Light Cyan inks.
- Right (Y, M, C) - Charges the Yellow, Magenta and Cyan inks.
- K - Charges the Black ink.

- Lm - Charges the Light Magenta ink.
- Lc - Charges the Light Cyan ink.
- M - Charges the Magenta ink.
- Y - Charges the Yellow ink.
- C - Charges the Cyan ink.

3 When the following message appears on the Front Panel, check whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
# CHARGE INK SYS
* BOTTLE OK?
```

4 If any of the Ink Cartridges contain **less** than 250cc of Ink or if a Purging Cartridge has been installed, the following message will be displayed on the Front Panel. Install a correct Ink Cartridge that contains more than 250cc of Ink in the indicated slot in order to continue.

```
LOAD NEW INK CAR
LOAD XX SLOT
```

5 The Charge Ink System process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
START INK FILL
* BOTTLE OK?
```

6 The Printer will charge the ink and the following message will be displayed on the Front Panel:

```
INK FILLING
        xxx
```

7 Once the Ink Charge process has been completed, the Front Panel will return to the Charge Ink System submenu.

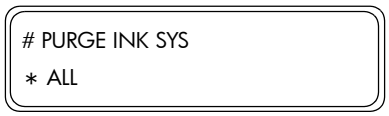
```
# CHARGE INK SYS
> ALL
```

Purge Ink System

This option allows you to remove the ink from the complete system or individual inks so that any relevant repair can be done to the Printer (e.g. replace the Ink Pump Assembly):

1. In the Printhead Maintenance submenu, scroll to "Purge Ink Sys" and press the **OK** key.

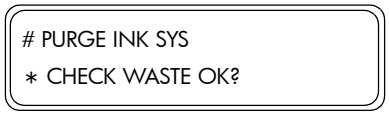
2. In the Purge Ink System submenu, select whether you would like to purge the complete Ink System, part of the Ink System or individual inks and then press the **OK** key.



The different options available in this submenu are as follows:

- ALL - Purges the complete Ink System.
- Left (K, Lm, Lc) - Purges the Black, Light Magenta and Light Cyan inks.
- Right (Y, M, C) - Purges the Yellow, Magenta and Cyan inks.
- K - Purges the Black ink.
- Lm - Purges the Light Magenta ink.
- Lc - Purges the Light Cyan ink.
- M - Purges the Magenta ink.
- Y - Purges the Yellow ink.
- C - Purges the Cyan ink.

3. When the following message appears on the Front Panel, check whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.



4. When the following message is displayed on the Front Panel, open the Left Ink Cartridge Door and remove ALL 3 Ink Cartridges.

5. Once the Ink Cartridges have been removed, install a Purging Cartridge in to each slot and close the Left Ink Cartridge Door.

6 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN L INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

7 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Ink Cartridges.

OPEN R INKCOVER
REMOVE CARTRIDGE

8 Once the Ink Cartridges have been removed, install a Priming Cartridge in to each slot and close the Right Ink Cartridge Door.

LOAD PURGING CAR
CLOSE R INKCOVER

9 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

10 The Ink Purging process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

START PURGING
* BOTTLE OK?

11 The Printer will extract the ink (which could take at least 10 minutes) and the following message will be displayed on the Front Panel:

PURGING
xxx

12 Once the ink has been extracted from the system, the following message will be displayed on the Front Panel. Power Off the Printer by pressing the **Cancel** and the **Power Off** keys together.

INK PURGE END
POWER OFF

Ink System Options - Store Ink System

This option allows you to fill the ink system with Storage Liquid so that the Printer can be stored for a period of up to four weeks while switched Off:

Opening or closing of the rear covers or levers should be avoided while the Store Ink System process is being performed or the operation may have to be restarted from the beginning. This will result in the Storage Liquid being wasted. If the Store Ink System process has to be restarted, NEW Storage Liquid Cartridges will be needed.

Once the Store Ink System procedure has been completed, the Storage Liquid Cartridges must be left installed in the Printer.

In order to perform the Store Ink System procedure, you will need to have the HP 790 Ink System Storage Kit available.

1. In the Printhead Maintenance submenu, scroll to "Ink System Opt" and press the **OK** key.

2. In the Ink System Opt submenu, scroll to the "Store Ink Sys" option and press the **OK** key.

3. When the following message appears on the Front Panel, check whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

4. When the following message is displayed on the Front Panel, open the Left Ink Cartridge Door and remove ALL 3 Ink Cartridges.

5. Once the Ink Cartridges have been removed, install a Purging Cartridge in to each slot and close the Left Ink Cartridge Door.

6 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN L INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

7 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Ink Cartridges.

OPEN R INKCOVER
REMOVE CARTRIDGE

8 Once the Ink Cartridges have been removed, install a Purging Cartridge in to each slot and close the Right Ink Cartridge Door.

LOAD PURGING CAR
CLOSE R INKCOVER

9 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

10 The Ink extraction process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

START PURGING
* BOTTLE OK?

11 The Printer will purge the ink (which could take at least 10 minutes) and the following message will be displayed on the Front Panel:

PURGING
xxx

12 Once the ink has been purged from the system, the following message will be displayed on the Front Panel. Open the Left Ink Cartridge Door and remove ALL 3 Purging Cartridges.

OPEN L INKCOVER
LOAD SL CART

13 Once the Purging Cartridges have been removed, install a NEW Storage Liquid Cartridge in to each slot and close the Left Ink Cartridge Door.

LOAD SL CART CLOSE L INKCOVER

14 If the Printer detects that a Storage Liquid Cartridge has been installed incorrectly, or if any of the Storage Liquid Cartridges contain less than 500cc of liquid or if an invalid Storage Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Storage Liquid Cartridge has been installed correctly before you can continue.

OPEN L INKCOVER LOAD XX SLOT	LOAD SL CART LOAD XX SLOT
LOAD NEW SL CART LOAD XX SLOT	

15 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Purging Cartridges.

OPEN R INKCOVER LOAD SL CART

16 Once the Purging Cartridges have been removed, install a NEW Storage Liquid Cartridge in to each slot and close the Right Ink Cartridge Door.

LOAD SL CART CLOSE R INKCOVER

17 If the Printer detects that a Storage Liquid Cartridge has been installed incorrectly, or if any of the Storage Liquid Cartridges contain less than 500cc of liquid or if an invalid Storage Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Storage Liquid Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER LOAD XX SLOT	LOAD SL CART LOAD XX SLOT
LOAD NEW SL CART LOAD XX SLOT	

18 The Storage Liquid charge process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
START FILLING SL
* BOTTLE OK?
```

19 The Printer will charge the Storage Liquid and the following message will be displayed on the Front Panel:

```
FILLING SL
          xxx
```

20 Once the Storage Liquid has been charged, the following message will be displayed on the Front Panel. Open the Left Ink Cartridge Door and remove ALL 3 Storage Liquid Cartridges.

```
OPEN L INKCOVER
REMOVE CARTRIDGE
```

21 Once the Storage Liquid Cartridges have been removed, install a Purging Cartridge in to each slot and close the Left Ink Cartridge Door.

```
LOAD PURGING CAR
CLOSE L INKCOVER
```

22 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

```
OPEN L INKCOVER
LOAD XX SLOT
```

```
LOAD PURGING CAR
LOAD XX SLOT
```

23 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Storage Liquid Cartridges.

```
OPEN R INKCOVER
REMOVE CARTRIDGE
```

24 Once the Storage Liquid Cartridges have been removed, install a Purging Cartridge in to each slot and close the Right Ink Cartridge Door.

```
LOAD PURGING CAR
CLOSE R INKCOVER
```

25 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

26 The Storage Liquid purge process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

START PURGING
* BOTTLE OK?

27 The Printer will extract the Storage Liquid (which could take at least 10 minutes) and the following message will be displayed on the Front Panel:

PURGING
xxx

28 Once the Storage Liquid has been extracted from the system, the following message will be displayed on the Front Panel. Open the Left Ink Cartridge Door and remove ALL 3 Purging Cartridges.

OPEN L INKCOVER
LOAD SL CART

29 Once the Purging Cartridges have been removed, install a used Storage Liquid Cartridge in to each slot and close the Left Ink Cartridge Door.

LOAD SL CART
CLOSE L INKCOVER

30 If the Printer detects that a Maintenance Liquid Cartridge has been installed incorrectly, or if any of the Maintenance Liquid Cartridges contain less than 250cc of liquid or if an invalid Maintenance Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Maintenance Liquid Cartridge has been installed correctly before you can continue.

OPEN L INKCOVER LOAD XX SLOT	LOAD SL CART LOAD XX SLOT

LOAD NEW SL CART
LOAD XX SLOT

31 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Purging Cartridges.

OPEN R INKCOVER
LOAD SL CART

32 Once the Purging Cartridges have been removed, install a used Storage Liquid Cartridge in to each slot and close the Right Ink Cartridge Door.

LOAD SL CART
CLOSE R INKCOVER

33 If the Printer detects that a Maintenance Liquid Cartridge has been installed incorrectly, or if any of the Maintenance Liquid Cartridges contain less than 250cc of liquid or if an invalid Maintenance Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Maintenance Liquid Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER
LOAD XX SLOT

LOAD SL CART
LOAD XX SLOT

LOAD NEW SL CART
LOAD XX SLOT

34 The Storage Liquid charge process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

START FILLING SL
* BOTTLE OK?

35 The Printer will charge the Storage Liquid and the following message will be displayed on the Front Panel:

FILLING SL
xxx

36 Once the Storage Liquid has been charged, the Capping Station will be filled and the following message will be displayed:

WASH PRINTHEADS
EXECUTING

37 Once the Store Ink System process has been completed, the Front Panel will return to the Ink SYstem Opt submenu.

INK SYSTEM OPT
> STORE INK SYS

Ink System Options - Clean Ink System

This option allows you to clean the ink system with Cleaning Liquid after the Printer is powered On after being stored for a long period:

Opening or closing of the rear covers or levers should be avoided while the Clean Ink System process is being performed or the operation may have to be restarted from the beginning. This will result in the Cleaning Liquid being wasted. If the Clean Ink System process has to be restarted, NEW Cleaning Liquid Cartridges will be needed.

In order to perform the Store Ink System procedure, you will need to have the HP 790 Ink System Cleaning Kit available.

1. In the Printhead Maintenance submenu, scroll to "Ink System Opt" and press the **OK** key.

```
# INK SYSTEM OPT
> STORE INK SYS
```

2. In the Ink System Opt submenu, scroll to the "Clean Ink Sys" option and press the **OK** key.

```
# INK SYSTEM OPT
* CLEAN INK SYS
```

3. When the following message appears on the Front Panel, check whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
# INK SYSTEM OPT
* BOTTLE OK?
```

4. When the following message is displayed on the Front Panel, open the Left Ink Cartridge Door and remove ALL 3 Storage Liquid Cartridges.

```
OPEN L INKCOVER
REMOVE CARTRIDGE
```

5. Once the Storage Liquid Cartridges have been removed, install a Purging Cartridge in to each slot and close the Left Ink Cartridge Door.

```
LOAD PURGING CAR
CLOSE L INKCOVER
```

6 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN L INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

7 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Storage Liquid Cartridges.

OPEN R INKCOVER REMOVE CARTRIDGE

8 Once the Storage Liquid Cartridges have been removed, install a Purging Cartridge in to each slot and close the Right Ink Cartridge Door.

LOAD PURGING CAR CLOSE R INKCOVER

9 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

10 The Storage Liquid purge process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

START PURGING * BOTTLE OK?

11 The Printer will purge the Storage Liquid (which could take at least 10 minutes) and the following message will be displayed on the Front Panel:

PURGING xxx

12 Once the Storage Liquid has been purged from the system, the following message will be displayed on the Front Panel. Open the Left Ink Cartridge Door and remove ALL 3 Purging Cartridges.

OPEN L INKCOVER LOAD CL CART

13 Once the Purging Cartridges have been removed, install a NEW Cleaning Liquid Cartridge in to each slot and close the Left Ink Cartridge Door.

LOAD CL CART CLOSE L INKCOVER

14 If the Printer detects that a Cleaning Liquid Cartridge has been installed incorrectly, or if any of the Cleaning Liquid Cartridges contain less than 500cc of liquid or if an invalid Cleaning Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Cleaning Liquid Cartridge has been installed correctly before you can continue.

OPEN L INKCOVER LOAD XX SLOT	LOAD CL CART LOAD XX SLOT
LOAD NEW CL CART LOAD XX SLOT	

15 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Purging Cartridges.

OPEN R INKCOVER LOAD CL CART

16 Once the Purging Cartridges have been removed, install a NEW Cleaning Liquid Cartridge in to each slot and close the Right Ink Cartridge Door.

LOAD CL CART CLOSE R INKCOVER

17 If the Printer detects that a Cleaning Liquid Cartridge has been installed incorrectly, or if any of the Cleaning Liquid Cartridges contain less than 500cc of liquid or if an invalid Cleaning Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Cleaning Liquid Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER LOAD XX SLOT	LOAD CL CART LOAD XX SLOT
LOAD NEW CL CART LOAD XX SLOT	

18 The Cleaning Liquid charge process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
START FILLING CL
* BOTTLE OK?
```

19 The Printer will charge the Cleaning Liquid and the following message will be displayed on the Front Panel:

```
FILLING CL
          xxx
```

20 Once the Cleaning Liquid has been charged, the following message will be displayed on the Front Panel. Open the Left Ink Cartridge Door and remove ALL 3 Cleaning Liquid Cartridges.

```
OPEN L INKCOVER
REMOVE CARTRIDGE
```

21 Once the Cleaning Liquid Cartridges have been removed, install a Purging Cartridge in to each slot and close the Left Ink Cartridge Door.

```
LOAD PURGING CAR
CLOSE L INKCOVER
```

22 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

```
OPEN L INKCOVER
LOAD XX SLOT
```

```
LOAD PURGING CAR
LOAD XX SLOT
```

23 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Cleaning Liquid Cartridges.

```
OPEN R INKCOVER
REMOVE CARTRIDGE
```

24 Once the Cleaning Liquid Cartridges have been removed, install a Purging Cartridge in to each slot and close the Right Ink Cartridge Door.

```
LOAD PURGING CAR
CLOSE R INKCOVER
```

25 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

26 The Cleaning Liquid purge process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

START PURGING * BOTTLE OK?

27 The Printer will extract the Cleaning Liquid (which could take at least 10 minutes) and the following message will be displayed on the Front Panel:

PURGING xxx

28 Once the Cleaning Liquid has been purged from the system, the following message will be displayed on the Front Panel. Open the Left Ink Cartridge Door and remove ALL 3 Purging Cartridges.

OPEN L INKCOVER LOAD CL CART

29 Once the Purging Cartridges have been removed, install a used Cleaning Liquid Cartridge in to each slot and close the Left Ink Cartridge Door.

LOAD CL CART CLOSE L INKCOVER

30 If the Printer detects that a Cleaning Liquid Cartridge has been installed incorrectly, or if any of the Cleaning Liquid Cartridges contain less than 500cc of liquid or if an invalid Cleaning Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Cleaning Liquid Cartridge has been installed correctly before you can continue.

OPEN L INKCOVER LOAD XX SLOT	LOAD CL CART LOAD XX SLOT
LOAD NEW CL CART LOAD XX SLOT	

31 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Purging Cartridges.

```
OPEN R INKCOVER
LOAD CL CART
```

32 Once the Purging Cartridges have been removed, install a used Cleaning Liquid Cartridge in to each slot and close the Right Ink Cartridge Door.

```
LOAD CL CART
CLOSE R INKCOVER
```

33 If the Printer detects that a Cleaning Liquid Cartridge has been installed incorrectly, or if any of the Cleaning Liquid Cartridges contain less than 500cc of liquid or if an invalid Cleaning Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Cleaning Liquid Cartridge has been installed correctly before you can continue.

```
OPEN R INKCOVER
LOAD XX SLOT
```

```
LOAD CL CART
LOAD XX SLOT
```

```
LOAD NEW CL CART
LOAD XX SLOT
```

34 The Cleaning Liquid charge process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
START FILLING CL
* BOTTLE OK?
```

35 The Printer will charge the Cleaning Liquid and the following message will be displayed on the Front Panel:

```
FILLING CL
          xxx
```

36 Once the Cleaning Liquid has been charged, the Printheads and the Sub-Tank will be flushed and the following message will be displayed:

```
FLUSHING
          xxx
```

37 Once the printheads and the Sub-Tank have been flushed, the following message will be displayed on the Front Panel. Open the Left Ink Cartridge Door and remove ALL 3 Cleaning Liquid Cartridges.

OPEN L INKCOVER REMOVE CARTRIDGE

38 Once the Cleaning Liquid Cartridges have been removed, install a Purging Cartridge in to each slot and close the Left Ink Cartridge Door.

LOAD PURGING CAR CLOSE L INKCOVER

39 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN L INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

40 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Cleaning Liquid Cartridges.

OPEN R INKCOVER REMOVE CARTRIDGE

41 Once the Cleaning Liquid Cartridges have been removed, install a Purging Cartridge in to each slot and close the Right Ink Cartridge Door.

LOAD PURGING CAR CLOSE R INKCOVER

42 If the Printer detects that a Purging Cartridge has been installed incorrectly or if an invalid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Purging Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER LOAD XX SLOT	LOAD PURGING CAR LOAD XX SLOT

43 The Cleaning Liquid purge process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

START PURGING * BOTTLE OK?

44 The Printer will extract the Cleaning Liquid (which could take at least 10 minutes) and the following message will be displayed on the Front Panel:

```
PURGING
xxx
```

45 Once the Cleaning Liquid has been purged from the system, the following message will be displayed on the Front Panel. Open the Left Ink Cartridge Door and remove ALL 3 Purging Cartridges.

```
OPEN L INKCOVER
LOAD CL CART
```

46 Once the Purging Cartridges have been removed, install a used Cleaning Liquid Cartridge in to each slot and close the Left Ink Cartridge Door.

```
LOAD CL CART
CLOSE L INKCOVER
```

47 If the Printer detects that a Cleaning Liquid Cartridge has been installed incorrectly, or if any of the Cleaning Liquid Cartridges contain less than 500cc of liquid or if an invalid Cleaning Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Cleaning Liquid Cartridge has been installed correctly before you can continue.

```
OPEN L INKCOVER
LOAD XX SLOT
```

```
LOAD CL CART
LOAD XX SLOT
```

```
LOAD USED CL CART
LOAD XX SLOT
```

48 When the following message is displayed on the Front Panel, open the Right Ink Cartridge Door and remove ALL 3 Purging Cartridges.

```
OPEN R INKCOVER
LOAD CL CART
```

49 Once the Purging Cartridges have been removed, install a used Cleaning Liquid Cartridge in to each slot and close the Right Ink Cartridge Door.

```
LOAD CL CART
CLOSE R INKCOVER
```

50 If the Printer detects that a Cleaning Liquid Cartridge has been installed incorrectly, or if any of the Cleaning Liquid Cartridges contain less than 500cc of liquid or if an invalid Cleaning Liquid Cartridge has been installed, one of the following messages will be displayed on the Front Panel. You will need to make sure that a valid Cleaning Liquid Cartridge has been installed correctly before you can continue.

OPEN R INKCOVER LOAD XX SLOT	LOAD CL CART LOAD XX SLOT
LOAD USED CL CART LOAD XX SLOT	

51 The Sub-Tank priming process will start and you will need to recheck whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

PRIME SUBTANK
* BOTTLE OK?

52 The Printer will extract the Sub-Tank and the following message will be displayed on the Front Panel:

PURGING
xxx

53 Once the Clean Ink System process has been completed, the Front Panel will return to the Ink System Opt submenu.

INK SYSTEM OPT
> CLEAN INK SYS

54 Remove the Cleaning Liquid Cartridges from the Printer.

55 Install normal Ink Cartridges into the Printer and perform the Charge Ink System procedure ⇒ Page *4-23*.

Ink Charge Done

This option allows you to check or indicate whether ink charge has been completed:

1 In the Printhead Maintenance submenu, scroll to "Ink Charge Done" and press the **OK** key.

```
# INK CHARGE DONE
> NO
```

2 In the Ink Charge Done submenu, select "Yes" if ink charge has been completed or "No" if ink charge has not been completed yet and then press the **OK** key.

```
# INK CHARGE DONE
* YES
```

Printhead Recovery

This option allows you to activate the Printhead Recovery process:

1 In the Printhead Maintenance submenu, scroll to "PH Recovery" and press the **OK** key.

```
# PH RECOVERY
> NORMAL ALL
```

2 In the PH Recovery submenu, select the level of Printhead recovery you would like to activate and then press the **OK** key.

```
# PH RECOVERY
* NORMAL ALL
```

The different options in this submenu are as follows:

- Normal All - Activates a normal recovery for all Printheads.
- Strong All - Activates a strong recovery for all colors.
- Strong K, Lm, Lc - Activates a strong recovery for the Black, Light Magenta and Light Cyan Printheads.
- Strong Y, M, C - Activates a strong recovery for the Yellow, Magenta and Cyan Printheads.

3 The Carriage will begin to perform the printhead recovery process, which can take a few minutes.

Uncap Carriage

This option allows you to uncap the Carriage from the Capping Station:

Never try to move the Carriage out of the Capping Station without first uncapping the Carriage.

1 In the Printhead Maintenance submenu, scroll to "Uncap Carriage" and press the **OK** key. The Capping Station will move downwards, uncapping the Carriage.

```
# UNCAP CARRIAGE
>
```

Cap Carriage

This option allows you to cap the Carriage in the Capping Station:

Never leave the Carriage uncapped for long periods of time since this can seriously damage the Printheads.

1 In the Printhead Maintenance submenu, scroll to "Cap Carriage" and press the **OK** key. The Capping Station will move upwards, capping the Carriage.

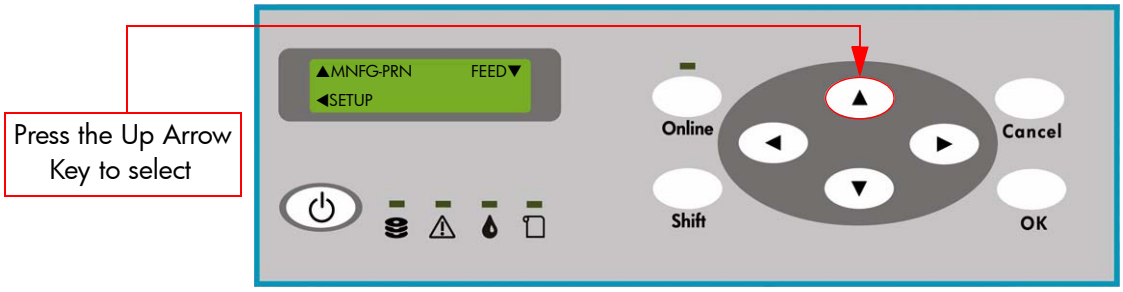
```
# CAP CARRIAGE
>
```

MNFG-PRN (Manufacturing Patterns)

This menu contains the necessary test patterns to check that the Printer is functioning correctly. The different options available in this menu are as follows:

- MNFG Pattern 0.
- MNFG Pattern 1.
- MNFG Pattern 2.
- MNFG Pattern 3.
- MNFG Pattern 4.
- MNFG Pattern 5.
- MNFG Pattern 6.
- MNFG Pattern 7.
- MNFG Pattern 8.
- MNFG Pattern 9.
- MNFG Pattern 10.
- MNFG Pattern 11.
- MNFG Pattern 12.

To enter in to the Manufacturing Pattern menu, enter in to the Maintenance Mode and press the **Shift** key once and then the ▲ key.



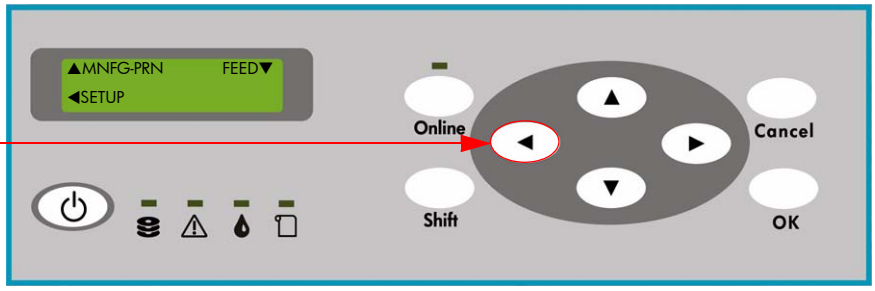
The MNFG Patterns in this menu are for Manufacturing purposes ONLY and should not be used for troubleshooting purposes.

SETUP

This menu contains the necessary option to set the different system parameters, like language or system time. The different options available in this menu are as follows:

- Language ⇒ Page *4-45*.
- Beeper Settings ⇒ Page *4-46*.
- System Date ⇒ Page *4-46*.
- System Time ⇒ Page *4-46*.
- OEM or HP Serial Number ⇒ Page *4-47*.
- NVRAM Initialization ⇒ Page *4-47*.
- Save Calibrations ⇒ Page *4-47*.
- Restore Calibrations ⇒ Page *4-48*.
- Save NVRAM ⇒ Page *4-48*.
- Restore NVRAM ⇒ Page *4-48*.
- Boot Version ⇒ Page *4-49*.
- Printer Firmware Version ⇒ Page *4-49*.
- Main PCA Version ⇒ Page *4-49*.
- Carriage PCA Version ⇒ Page *4-49*.
- ASIC version ⇒ Page *4-49*.
- Heater Hardware Version ⇒ Page *4-49*.
- Heater Firmware Version ⇒ Page *4-50*.
- Heater Upgrade ⇒ Page *4-50*.
- Install Done ⇒ Page *4-51*.

To enter in to the Setup menu, enter in to the Maintenance Mode and press the **Shift** key once and then the ◀ key.



Language

This option allows you to select the language of the Front Panel display:

1 In the Setup submenu, scroll to "Language" and press the **OK** key.

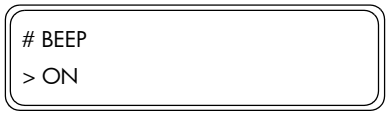
```
# LANGUAGE
> ENGLISH
```

2 In the Language submenu, select "English" or "Japanese" and press the **OK** key.

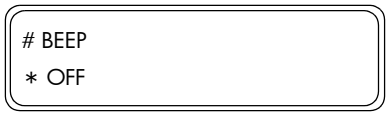
Beeper Settings

This option allows you to turn On/Off the beeper:

1 In the Setup submenu, scroll to "Beep" and press the **OK** key.



2 In the Language submenu, select "On" or "Off" and then press the **OK** key.



System Date

This option allows you to set the current date:

1 In the Setup submenu, scroll to "System Date" and press the **OK** key.

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

Format: Year/Month/Day

3 Press the **OK** key once you have entered the new date.

System Time

This option allows you to set the current time:

1 In the Setup submenu, scroll to "System Time" and press the **OK** key.

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

Format: Hour:Minute

3 Press the **OK** key once you have entered the new time.

OEM or HP Serial Number

This option allows you to set the Serial Number of the Printer:

1 In the Setup submenu, scroll to "HP Serial No." or "OEM Serial No." and press the **OK** key.

```
# HP SERIAL No.
> 0000000000
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

```
# HP SERIAL No.
> 012345678A
```

HP: 10 Digits
OEM: 8 Digits

3 Press the **OK** key once you have entered the new serial number.

NVRAM Initialization

This option allows you to initialize the NVRAM with the default values. The Printer correction values are returned to the values before adjustment:

1 In the Setup submenu, scroll to "NVRAM Init" and press the **OK** key.

```
# NVRAM INIT
>
```

2 You will need to confirm that you want to initialize the NVRAM by pressing the **OK** key.

```
# NVRAM INIT
* OK?
```

Save Calibrations

This option allows you to save the Calibrations stored in the NVRAM into the Factory Defaults area in the flash memory:

1 In the Setup submenu, scroll to "Save Calibs" and press the **OK** key.

```
# SAVE CALIBS
>
```

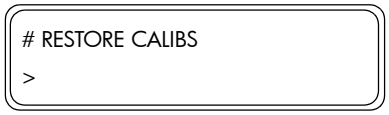
2 You will need to confirm that you want to save the NVRAM Calibrations by pressing the **OK** key.

```
# SAVE CALIBS
* OK?
```

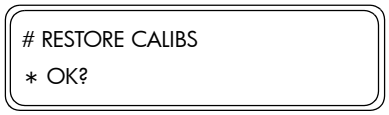
Restore Calibrations

This option allows you to restore the Calibrations stored in the Factory Defaults area to the NVRAM:

1 In the Setup submenu, scroll to "Restore Calibs" and press the **OK** key.



2 You will need to confirm that you want to restore the contents to the NVRAM by pressing the **OK** key.



Save NVRAM

This option allows you to save the contents stored in the NVRAM into the NVRAM backup area in the flash memory:

1 In the Setup submenu, scroll to "Save NVRAM" and press the **OK** key.

2 You will need to confirm that you want to save the NVRAM contents by pressing the **OK** key.

Restore NVRAM

This option allows you to restore the contents stored in the NVRAM backup area to the NVRAM:

1 In the Setup submenu, scroll to "Restore NVRAM" and press the **OK** key.

2 You will need to confirm that you want to restore the NVRAM contents by pressing the **OK** key.

Boot Version

This option allows you to view the version of the Boot ROM:

1 In the Setup submenu, scroll to "Boot Version" and press the **OK** key.

# BOOT VERSION > X.XX	X.XX: Version Number

Printer Firmware Version

This option allows you to view the version of the Printer Firmware:

1 In the Setup submenu, scroll to "Printer FW Ver" and press the **OK** key.

# PRINTER FW VER > X.XX_YY	X.XX: Version Number YY: Control Code

Main PCA Version

This option allows you to view the version of the Main PCA:

1 In the Setup submenu, scroll to "Main PCA Ver" and press the **OK** key.

# MAIN PCA VER > X.X	X.X: Version Number

Carriage PCA Version

This option allows you to view the version of the Carriage PCA:

1 In the System submenu, scroll to "Carriage PCA Version" and press the **OK** key.

# CARRIAGE PCA > XX.X	XX.X: Version Number

ASIC Version

This option allows you to view the version of the ASIC:

1 In the Setup submenu, scroll to "ASIC Version" and press the **OK** key.

# ASIC VERSION > XX.X	XX.X: Version Number

Heater Hardware Version

This option allows you to view the hardware version of the Heater:

1 In the System submenu, scroll to "Heater HW Ver" and press the **OK** key.

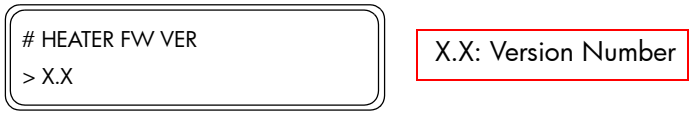
# HEATER HW VERS > X.X	X.X: Version Number

If the Heater cannot be recognized, "_._" will be displayed.

Heater Firmware Version

This option allows you to view the firmware version of the Heater:

1 In the Setup submenu, scroll to "Heater FW Ver" and press the **OK** key.

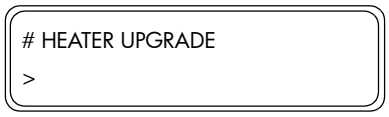


If the Heater cannot be recognized, "_._" will be displayed.

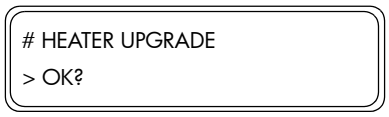
Heater Upgrade

This option allows you to update the firmware version of the Heater:

1 In the Setup submenu, scroll to "Heater Upgrade" and press the **OK** key.

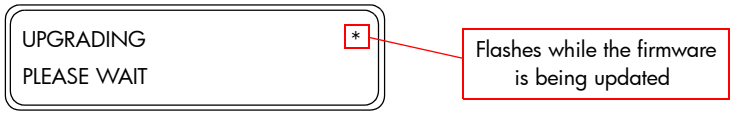


2 You will need to confirm that you want to upgrade the firmware version of the Heater by pressing the **OK** key.



3 You will need to insert the IC Card containing the latest version of the firmware into the Main PCA. Press the **OK** key once the IC Card has been inserted.

4 The Printer will start upgrading the Heater firmware and the following message will appear on the Front Panel.



Do NOT power Off the Printer while the firmware is being upgraded as this may cause the upgrade process to fail.

5 Once the upgrade has been completed, the following message will appear on the Front Panel.

6 Power Off the Printer and power it On again and check the Heater firmware version once the Printer has initialized ⇒ Page *4-50*.

The following messages could appear during the Heater firmware upgrade procedure:

- The Printer does not recognize the Heater Control Panel.

  HEATER PANEL ERR
  POWER OFF/ON

  – Try powering Off the Printer and On again and retry the firmware upgrade procedure. If the message continues to appear after rebooting several times, then replace the Heater Panel ⇒ Page *8-27*.

- There is a problem with the IC Card.

  IC CARD ERROR
  POWER OFF/ON

  – Check that the IC Card contains the actual firmware image.
  – Make sure that the IC Card is inserted into the Main PCA correctly.
  – Try powering Off the Printer and On again and retry the firmware upgrade procedure. If the message continues to appear after rebooting several times, then replace the Heater Panel ⇒ Page *8-27*.

- There is a communication problem between the Main PCA and the Heater Panel.

  DATA ERROR
  POWER OFF/ON

  – Try powering Off the Printer and On again and retry the firmware upgrade procedure. If the message continues to appear after rebooting several times, then replace the Heater Panel ⇒ Page *8-27*.

- The upgrade procedure cannot be performed because the Heater firmware has been deleted.

  WRITING ERROR
  POWER OFF/ON

  – Replace the Heater Panel ⇒ Page *8-27*.

Install Done

This option allows you to indicate whether the Printer Installation has been performed correctly so that the preventive maintenance counters can activated:

1 In the Setup submenu, scroll to "Install Done" and press the **OK** key.

INSTALL DONE
> NO

2 In the Install Done submenu, scroll to "Yes" and press the **OK** key. This will indicate that the Printer has been successfully installed.

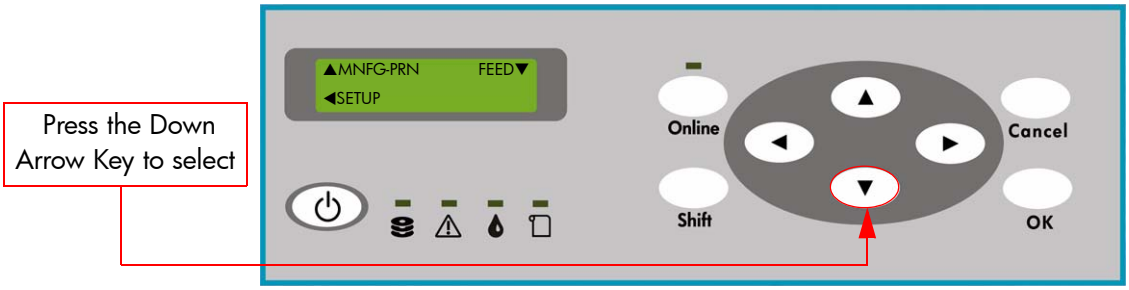
```
# INSTALL DONE
* YES
```

FEED

This option allows you to feed the paper manually in to the Printer.

To feed the paper manually:

1 Enter in to the Maintenance Mode and press the **Shift** key once and then keep the ▼ key pressed in order to manually feed the paper.



2 During the manual feed process, the following message will appear on the Front Panel:

```
FEEDING MEDIA
```

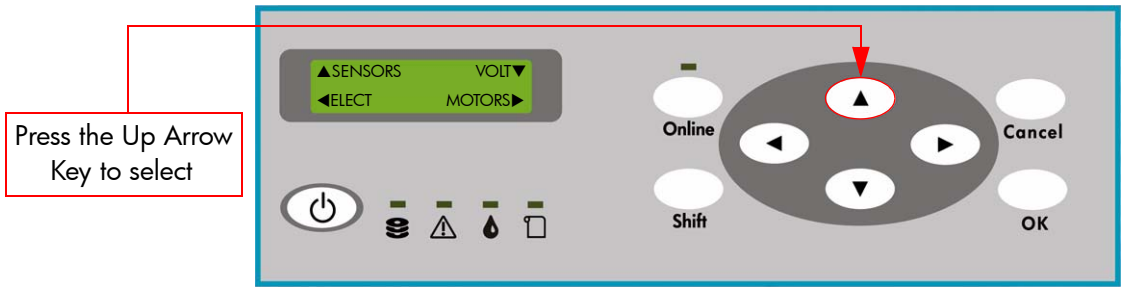
3 Once the ▼ key is released, the paper stops feeding and the top menu will appear on the Front Panel.

SENSORS

This menu can be used to check the status of the various sensors and thermistors in the Printer in real time. The different options available in this menu are as follows:

- Printer Sensors ⇒ Page *4-53*.
- Ink Sensor ⇒ Page *4-54*.
- Sub Tank Sensor ⇒ Page *4-55*.
- Bottle Sensor ⇒ Page *4-56*.
- TUR Sensors ⇒ Page *4-57*.
- Temperature Sensors ⇒ Page *4-57*.

To enter in to the Sensors menu, enter in to the Maintenance Mode and press the **Shift** key twice and then the ▲ key.



Printer Sensors

This option allows you to check the status of the Printers sensors in real time so that faulty sensors can be replaced as necessary:

1 In the Sensors submenu, scroll to "Printer Sensors" and press the ▶ key.

```
# PRINTER SENSORS
> LINE SENSOR
```

2 In the Printer Sensors submenu, select the Sensor that you would like to test and press the **OK** key. If you would like to exit the Printer Sensors submenu, press the ◀ key.

```
# PRINTER SENSORS
# LINE SENSOR   >
```

3 The Front Panel will show the status of the selected Sensor. By activating and deactivating the selected Sensor, the status will change and a buzzer will make a sound.

```
# PRINTER SENSORS
# LINE SENSOR  *0
```

The Sensors that can be tested in this menu are as follows:

- Line Sensor - Displays the status of the Line Sensor located in the Carriage Assembly (0 = No paper, 1 = Paper present).
- Front Media - Displays the status of the Front Media Sensor located under the Front Heater (0 = Not blocked, 1 = blocked).
- Rear Media - Displays the status of the Rear Media Sensor located under the Rear Heater (0 = Not blocked, 1 = blocked).
- Home Position - Displays the status of the Home Position Sensor (0 = Home position not detected, 1 = Home position detected).
- Wiper Blade - Displays the status of the Wiper Sensor (0 = Not blocked, 1 = blocked).
- Media Lever - Displays the status of the Media Lever Sensor located (0 = Raised, 1 = Lowered).
- Rear Cover-L - Displays the status of the Capping Door Sensor (0 = Closed, 1 = Open).
- Rear Cover-R - Displays the status of the Wiping Door Sensor (0 = Closed, 1 = Open).
- ME Sensor - Displays the status of the Media End Sensor (0 = Raised, 1 = Lowered).

4 If you would like to exit the Printer Sensors submenu, first press the **Cancel** key and then press the ◀ key.

Ink Sensor

This option allows you to check the status of the sensors related to the Ink Cartridges in real time so that faulty sensors can be replaced as necessary:

1 In the Sensors submenu, scroll to "Ink Sensor" and press the ▶ key.

```
# INK SENSOR
> K INK CART
```

2 In the Ink Sensor submenu, select the Sensor that you would like to test and press the **OK** key. If you would like to exit the Ink Sensor submenu, press the ◀ key.

```
# INK SENSOR
# K INK CART  >
```

3 The Front Panel will show the status of the selected Sensor. By activating and deactivating the selected Sensor, the status will change and a buzzer will make a sound.

```
# INK SENSOR
# K INK CART  *0
```

The Sensors that can be tested in this menu are as follows:

- K Ink Cart - Displays the status of the Black Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- Lm Ink Cart - Displays the status of the Light Magenta Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- Lc Ink Cart - Displays the status of the Light Cyan Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- Y Ink Cart - Displays the status of the Yellow Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- M Ink Cart - Displays the status of the Magenta Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- C Ink Cart - Displays the status of the Cyan Ink Cartridge Sensor (0 = Ink Cartridge not installed, 1 = Ink Cartridge installed).
- Inkcover-L - Displays the status of the Left Ink Cartridge Door Sensor (0 = Closed, 1 = Open).
- Inkcover-R - Displays the status of the Right Ink Cartridge Door Sensor (0 = Closed, 1 = Open).

4 If you would like to exit the Ink Sensor submenu, first press the **Cancel** key and then press the ◀ key.

Sub Tank Sensor

This option allows you to check the status of the sensors related to the Sub-Tank system in real time so that faulty sensors can be replaced as necessary:

1 In the Sensors submenu, scroll to "Sub Tank Sensor" and press the ▶ key.

```
# SUB TANK SENSOR
> K FULL
```

2 In the Sub Tank Sensor submenu, select the Sensor that you would like to test and press the **OK** key. If you would like to exit the Sub Tank Sensor submenu, press the ◀ key.

```
# SUB TANK SENSOR
# K FULL  >
```

3 The Front Panel will show the status of the selected Sensor. By activating and deactivating the selected Sensor, the status will change and a buzzer will make a sound.

```
# SUB TANK SENSOR
# K FULL  *0
```

The Sensors that can be tested in this menu are as follows:

- K Full - Displays the status of the Black Sub-Tank Full Sensor.
- Lm Full - Displays the status of the Light Magenta Sub-Tank Full Sensor.
- Lc Full - Displays the status of the Light Cyan Sub-Tank Full Sensor.

- Y Full - Displays the status of the Yellow Sub-Tank Full Sensor.
- M Full - Displays the status of the Magenta Sub-Tank Full Sensor.
- C Full - Displays the status of the Cyan Sub-Tank Full Sensor.
- K Half - Displays the status of the Black Sub-Tank Half Sensor.
- Lm Half - Displays the status of the Light Magenta Sub-Tank Half Sensor.
- Lc Half - Displays the status of the Light Cyan Sub-Tank Half Sensor.
- Y Half - Displays the status of the Yellow Sub-Tank Half Sensor.
- M Half - Displays the status of the Magenta Sub-Tank Half Sensor.
- C Half - Displays the status of the Cyan Sub-Tank Half Sensor.
- K Ink Pump - Displays the status of the Black Ink Pump Sensor.
- Lm Ink Pump - Displays the status of the Light Magenta Ink Pump Sensor.
- Lc Ink Pump - Displays the status of the Light Cyan Ink Pump Sensor.
- Y Ink Pump - Displays the status of the Yellow Ink Pump Sensor.
- M Ink Pump - Displays the status of the Magenta Ink Pump Sensor.
- C Ink Pump - Displays the status of the Cyan Ink Pump Sensor.

You will need to manually move the Full/Half Sensors and the Ink Pump Motor to change the status of the Sensors. If the status changes from "0" to "1", it means that the Sensor is working correctly.

4 If you would like to exit the Sub Tank Sensor submenu, first press the **Cancel** key and then press the ◀ key.

Bottle Sensor

This option allows you to check the status of the Waste Bottle Sensor in real time so that if it is faulty, it can be replaced as necessary:

1 In the Sensors submenu, scroll to "Bottle Sensor" and press the ▶ key.

```
# BOTTLE SENSOR
> PRESENT
```

2 In the Bottle Sensor submenu, press the **OK** key. If you would like to exit the Bottle Sensor submenu, press the ◀ key.

```
# BOTTLE SENSOR
# PRESENT  >
```

3 The Front Panel will show the status of the Waste Bottle Sensor. By activating and deactivating the Waste Bottle Sensor, the status will change and a buzzer will make a sound.

```
# BOTTLE SENSOR
# PRESENT  *0
```

4 If you would like to exit the Bottle Sensor submenu, first press the **Cancel** key and then press the ◀ key.

TUR Sensors

This option allows you to check the status of the sensors related to the Take-Up-Reel in real time so that faulty sensors can be replaced as necessary:

1 In the Sensors submenu, scroll to "TUR Sensors" and press the ▶ key.

```
# TUR SENSORS
> TUR SENSOR
```

2 In the TUR Sensors submenu, select the Sensor that you would like to test and press the **OK** key. If you would like to exit the TUR Sensors submenu, press the ◀ key.

```
# TUR SENSORS
# TUR SENSOR  >
```

3 The Front Panel will show the status of the selected Sensor. By activating and deactivating the selected Sensor, the status will change and a buzzer will make a sound.

```
# TUR SENSORS
# TUR SENSOR  *0
```

The Sensors that can be tested in this menu are as follows:

- TUR Sensor - Displays the status of the TUR Optical Sensor (0 = Sensor blocked, 1 = Sensor not blocked).
- Backwards - Displays the status of the Backwards Direction Switch.
- Forwards - Displays the status of Forwards Direction Switch.

4 If you would like to exit the TUR Sensors submenu, first press the **Cancel** key and then press the ◀ key.

Temperature Sensors

This option allows you to check the status of the temperature sensors located in the Printer in real time so that faulty sensors can be replaced as necessary:

1 In the Sensors submenu, scroll to "Temp Sensors" and press the ▶ key.

```
# TEMP SENSORS
> AMBIENT
```

2 In the Temp Sensors submenu, select the Sensor that you would like to test and press the **OK** key. If you would like to exit the Temp Sensors submenu, press the ◀ key.

```
# TEMP SENSORS
# AMBIENT  >
```

3 The Front Panel will show the temperature read by the selected Sensor.

The Temperature Sensors that can be tested in this menu are as follows:

- Ambient - Displays the environment temperature.
- K PH - Displays the temperature of the Black Head.
- Lm PH - Displays the temperature of the Light Magenta Head.
- Lc PH - Displays the temperature of the Light Cyan Head.
- Y PH - Displays the temperature of the Yellow Head.
- M PH - Displays the temperature of the Magenta Head.
- C PH - Displays the temperature of the Cyan Head.
- Carriage1 - Displays the temperature read by the sensor located at position 1 on the Carriage PCA.
- Carriage2 - Displays the temperature read by the sensor located at position 2 on the Carriage PCA.
- Carriage3 - Displays the temperature read by the sensor located at position 3 on the Carriage PCA.
- Carriage4 - Displays the temperature read by the sensor located at position 4 on the Carriage PCA.
- Carriage5 - Displays the temperature read by the sensor located at position 5 on the Carriage PCA.
- Carriage6 - Displays the temperature read by the sensor located at position 6 on the Carriage PCA.
- Carriage7 - Displays the temperature read by the sensor located at position 7 on the Carriage PCA.

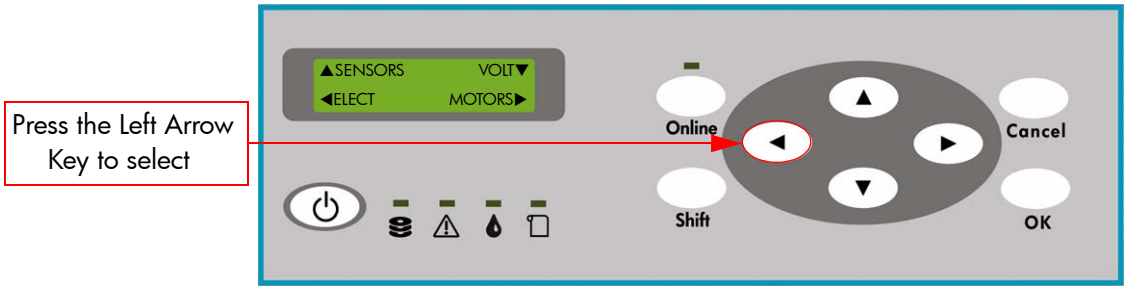
4 If you would like to exit the Temp Sensors submenu, first press the **Cancel** key and then press the ◀ key.

ELECT (Electronics)

This menu contains the necessary diagnostics that can be used to test the various electronic components in the Printer. The different options available in this menu are as follows:

- Flash ROM ⇒ Page *4-59*.
- PIO ⇒ Page *4-60*.
- NVRAM ⇒ Page *4-61*.
- Ink EEPROM ⇒ Page *4-62*.
- ATG ⇒ Page *4-62*.
- DRAM ⇒ Page *4-63*.
- RSM ⇒ Page *4-64*.
- PTC ⇒ Page *4-64*.
- PDD ⇒ Page *4-65*.
- ALL ⇒ Page *4-66*.
- VDD ⇒ Page *4-67*.
- Front Panel ⇒ Page *4-67*.

To enter in to the Electronics menu, enter in to the Maintenance Mode and press the **Shift** key twice and then the ◀ key.



Flash ROM

This option allows you to test the Flash ROM contained in the Main PCA:

1 In the Elect submenu, scroll to "Flash ROM" and press the **OK** key.

```
# FLASH ROM
>
```

2 You will need to confirm that you want to test the Flash ROM by pressing the **OK** key.

```
# FLASH ROM
* OK?
```

3 While the Flash ROM is being tested, the following message will be displayed on the Front Panel.

```
# FLASH ROM
* EXECUTING
```

4 If the Flash ROM test **passes**, the Front Panel will display the following message:

```
# FLASH ROM
* PASS
```

5 If the Flash ROM test **fails**, the Front Panel will display the following message:

```
# FLASH ROM
* FLASH ERR
```

If the Flash ROM test fails, try the following:

- Replace the Main PCA ⇒ Page *8-35*.

PIO (Parallel Input/Output)

This option allows you to test the Parallel Input/Output contained in the Main PCA:

1 In the Elect submenu, scroll to "PIO" and press the **OK** key.

```
# PIO
>
```

2 You will need to confirm that you want to test the PIO by pressing the **OK** key.

```
# PIO
* OK?
```

3 While the PIO is being tested, the following message will be displayed on the Front Panel.

```
# PIO
* EXECUTING
```

4 If the PIO test **passes**, the Front Panel will display the following message:

```
# PIO
* PASS
```

5 If the PIO test **fails**, the Front Panel will display the following message:

```
# PIO
* PIO ERR
```

If the PIO test fails, try the following:

- Replace the Main PCA ⇒ Page *8-35*.

NVRAM

This option allows you to test the NVRAM contained in the Main PCA:

1 In the Elect submenu, scroll to "NVRAM" and press the **OK** key.

```
# NVRAM
>
```

2 You will need to confirm that you want to test the NVRAM by pressing the **OK** key.

```
# NVRAM
* OK?
```

3 While the NVRAM is being tested, the following message will be displayed on the Front Panel.

```
# NVRAM
* EXECUTING
```

4 If the NVRAM test **passes**, the Front Panel will display the following message:

```
# NVRAM
* PASS
```

5 If the NVRAM test **fails**, the Front Panel will display the following message:

```
# NVRAM
* NVRAM ERR
```

If the NVRAM test fails, try the following:

- Replace the NVRAM ⇒ Page *8-39*.
- If the test fails again after replacing the NVRAM, replace the Main PCA ⇒ Page *8-35*.

Ink EEPROM

This option allows you to test the Ink EEPROM contained in the Ink Cartridge:

1 In the Elect submenu, scroll to "Ink EEPROM" and press the **OK** key.

```
# INK EEPROM
>
```

2 You will need to confirm that you want to test the Ink EEPROM by pressing the **OK** key.

```
# INK EEPROM
* OK?
```

3 While the Ink EEPROM is being tested, the following message will be displayed on the Front Panel.

```
# INK EEPROM
* EXECUTING
```

4 If the Ink EEPROM test **passes**, the Front Panel will display the following message:

```
# INK EEPROM
* PASS
```

5 If the Ink EEPROM test **fails**, the Front Panel will display the following message:

```
# INK EEPROM
* INK ERR
```

If the Ink EEPROM test fails, try the following:

- Replace the Ink Cartridge(s).
- Replace the Ink Supply Station (Left or Right) ⇒ Page *8-101*.
- Replace the Main PCA ⇒ Page *8-35*.

ATG (Band Memory Address Generator)

This option allows you to test the ATG contained in the Main PCA:

1 In the Elect submenu, scroll to "ATG" and press the **OK** key.

```
# ATG
>
```

2 You will need to confirm that you want to test the ATG by pressing the **OK** key.

```
# ATG
* OK?
```

3 While the ATG is being tested, the following messages will be displayed on the Front Panel.

```
# ATG
FILL 00
```

```
# ATG
CHECK 00 00 00
```

4 If the ATG test **passes**, the Front Panel will display the following message:

```
# ATG
* PASS
```

5 If the ATG test **fails**, the Front Panel will display the following message:

```
# ATG
* ATG ERR
```

If the ATG test fails, try the following:

- Replace the Main PCA ⇒ Page *8-35*.

DRAM

This option allows you to test the DRAM contained in the Main PCA:

1 In the Elect submenu, scroll to "DRAM" and press the **OK** key.

```
# DRAM
>
```

2 You will need to confirm that you want to test the DRAM by pressing the **OK** key.

```
# DRAM
* OK?
```

3 While the DRAM is being tested, the following messages will be displayed on the Front Panel.

```
# DRAM
WRITE 00 00
```

```
# DRAM
READ 00 00
```

4 If the DRAM test **passes**, the Front Panel will display the following message:

```
# DRAM
* PASS
```

5 If the DRAM test **fails**, the Front Panel will display the following message:

```
# DRAM
* DRAM ERR
```

If the DRAM test fails, try the following:

- Replace the Main PCA ⇒ Page *8-35*.

RSM

This option allows you to test the RSM contained in the Main PCA:

1 In the Elect submenu, scroll to "RSM" and press the **OK** key.

```
# RSM
>
```

2 You will need to confirm that you want to test the RSM by pressing the **OK** key.

```
# RSM
* OK?
```

3 While the RSM is being tested, the following message will be displayed on the Front Panel.

```
# RSM
* EXECUTING
```

4 If the RSM test **passes**, the Front Panel will display the following message:

```
# RSM
* PASS
```

5 If the RSM test **fails**, the Front Panel will display the following message:

```
# RSM
* RSM ERR
```

If the RSM test fails, try the following:

- Replace the Main PCA ⇒ Page *8-35*.

PTC

This option allows you to test the PTC contained in the Carriage PCA:

1 In the Elect submenu, scroll to "PTC" and press the **OK** key.

```
# PTC
>
```

2 You will need to confirm that you want to test the PTC by pressing the **OK** key.

```
# PTC
* OK?
```

3 While the PTC is being tested, the following message will be displayed on the Front Panel.

```
# PTC
* EXECUTING
```

4 If the PTC test **passes**, the Front Panel will display the following message:

```
# PTC
* PASS
```

5 If the PTC test **fails**, the Front Panel will display the following message:

```
# PTC
* PTC ERR
```

If the PTC test fails, try the following:

- Replace the Carriage PCA ⇒ Page *8-35*.
- Replace the Trailing Cable ⇒ Page *8-77*.
- Replace the Main PCA ⇒ Page *8-35*.

PDD

This option allows you to test the PDD contained in the Carriage PCA:

1 In the Elect submenu, scroll to "PDD" and press the **OK** key.

```
# PDD
>
```

2 You will need to confirm that you want to test the PDD by pressing the **OK** key.

```
# PDD
* OK?
```

3 While the PDD is being tested, the following message will be displayed on the Front Panel.

```
# PDD
* EXECUTING
```

4 If the PDD test **passes**, the Front Panel will display the following message:

```
# PDD
* PASS
```

5 If the PDD test **fails**, the Front Panel will display the following message:

```
# PDD
* PDD ERR
```

If the PDD test fails, try the following:

- Replace the Carriage PCA ⇒ Page *8-35*.
- Replace the Trailing Cable ⇒ Page *8-77*.
- Replace the Main PCA ⇒ Page *8-35*.

ALL

This option allows you to perform **all** the previous tests in one go:

1 In the Elect submenu, scroll to "ALL" and press the **OK** key.

```
# ALL
>
```

2 You will need to confirm that you want to perform **all** the test by pressing the **OK** key.

```
# ALL
* OK?
```

3 While **all** the tests are being performed, the following message will be displayed on the Front Panel.

```
# ALL
* EXECUTING
```

4 If **all** the tests **pass**, the Front Panel will display the following message:

```
# ALL
* PASS
```

5 If any of the tests **fails**, the Front Panel will display the name of the part that has failed. In this case, refer to the corrective action for the failing part.

VDD

This option allows you to test the VDD voltage (either 24V, 17V or 6V) of the Carriage PCA:

1 In the Elect submenu, scroll to "VDD" and press the **OK** key.

```
# VDD
> 24V
```

2 Select the Voltage of the Head Relay Board that you want to test and press the **OK** key.

```
# VDD
* 17V
```

3 Measure the voltage (using a tester) of the different points on the Head Relay Board to verify that the voltage settings are correct. Measuring points and expected values on the Carriage PCA should be as follows:

Measuring point on the carriage PCA						Voltage Selected			Usage
						24V	17V	6V	
K	Lm	Lc	Y	M	C	Expected Voltage (V)			
TP22	TP32	TP40	TP48	TP56	TP64	24	17	6	Left-On Voltage
TP25	TP24	TP42	TP50	TP58	TP66	12	8.5	3	Left-Off Voltage
TP28	TP36	TP44	TP52	TP60	TP68	24	17	6	Right-On Voltage
TP30	TP38	TP46	TP54	TP62	TP70	12	8.5	3	Right-Off Voltage

If the VDD test fails, try the following:

- Replace the Carriage PCA ⇒ Page *8-91*.

Front Panel

This option allows you to test the Display and keys of the Front Panel:

1 In the Elect submenu, scroll to "Front Panel" and press the **OK** key.

```
# FRONT PANEL
> KEYS
```

2 Select whether you want to test the "Display" or "Keys" and press the **OK** key.

```
# PANEL
* KEY
```

3 If you select to test the "Display", the Front Panel will turn ON and Off the LED's in sequence, display the different character strings and activate the buzzer.

4 If you select to test the "Keys", you will need to confirm that you want to perform the test by pressing the **OK** key.

```
# FRONT PANEL
* KEYS  OK?
```

5 When the following message is displayed on the Front Panel, press the different keys on the Front Panel to test if they are working correctly.

```
KEYS TEST
off
```

6 If the key is pressed correctly, the Front Panel will display the name of the key that was pressed. Press the **OK** key to exit.

```
KEYS TEST
SHIFT_KEY
```

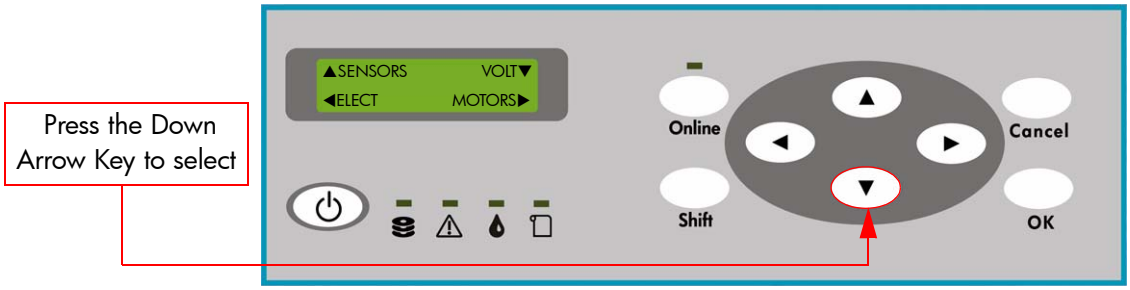
If the Front Panel test fails, try the following:

- Replace the Front Panel Assembly ⇒ Page *8-25*.

VOLT (Voltage Check)

This menu can be used to turn the Voltage check to high or low.

1 To enter in to the Volt menu, enter in to the Maintenance Mode and press the **Shift** key twice and then the ▼ key.



2 Once in the Voltage Check submenu, press the **OK** key.

```
# VOLTAGE CHECK
> HIGH
```

3 In the Voltage Check submenu, select either "high" or "Low" and then press the **OK** key.

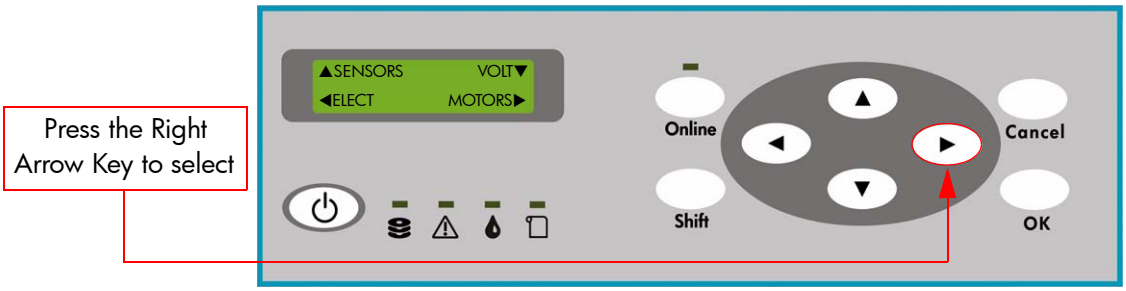
```
# VOLTAGE CHECK
* LOW
```

MOTORS

This menu contains the necessary diagnostics that can be used to test the various Motors in the Printer. The different options available in this menu are as follows:

- Media Advance Motor ⇒ Page *4-70*.
- Capping Station Motor ⇒ Page *4-71*.
- Wiping Station Motor ⇒ Page *4-72*.
- Solenoid (Left or Right) ⇒ Page *4-72*.
- Vacuum Fans (Left, Right or Center) ⇒ Page *4-73*.
- Exhaust Fans ⇒ Page *4-74*.
- Printhead Cooling Fans ⇒ Page *4-74*.
- TUR Motor ⇒ Page *4-75*.
- Pump Motors ⇒ Page *4-75*.

To enter in to the Motors menu, enter in to the Maintenance Mode and press the **Shift** key twice and then the ▶ key.



Media Advance Motor

Make sure you unload Media from the Printer before attempting to turn the Media Advance Motor.

This option allows you to turn the Media Advance Motor:

1 In the Motors submenu, scroll to "Media Adv Motor" and press the **OK** key.

```
# MEDIA ADV MOTOR
> OFF
```

2 In the Media Adv Motor submenu, select the direction that you would like the Media Advance Motor to turn and then press the **OK** key.

```
# MEDIA ADV MOTOR
* FORWARD
```

The different directions that you can turn the Media Advance Motor are as follows:

- Off - Stops the Motor turning.
- Forwards - Turns the Motor in the paper feeding direction.
- Backwards - Turns the Motor in the reverse direction.

3 You will need to confirm that you want to turn the Media Advance Motor in the selected direction by pressing the **OK** key.

```
# MEDIA ADV MOTOR
* FORWARDS OK?
```

4 To stop the motor turning, select "Off" in the Media Adv Motor submenu and then press the **OK** key.

```
# MEDIA ADV MOTOR
* OFF
```

Capping Station Motor

This option allows you to control the Capping Station Motor:

1 In the Motors submenu, scroll to "Cap Stat Motor" and press the **OK** key.

```
# CAP STAT MOTOR
> STOP
```

2 In the Camp Stat Motor submenu, select the direction that you would like the Capping Station Motor to run and then press the **OK** key.

```
# CAP STAT MOTOR
* UNCAP
```

The different directions that you can run the Pump Motor are as follows:

- Stop - Stops the Motor running.
- Prime - Runs the Motor in the normal direction (causes priming).
- Uncap - Moves the Capping Station downwards and then turns the Motor in the reverse direction.

It is recommended to select "Uncap" first before trying to select "Prime". If the Printheads are capped when "prime" is selected, it may cause damage to the Printheads.

3 You will need to confirm that you want to run the Capping Station Motor in the selected direction by pressing the **OK** key.

```
# CAP STAT MOTOR
* UNCAP OK?
```

4 To stop the Capping Station Motor turning, select "Stop" in the Camp Stat Motor submenu and then press the **OK** key.

```
# CAP STAT MOTOR
* STOP
```

Wiping Station Motor

This option allows you to control the Wiping Station Motor:

1 In the Motors submenu, scroll to "Wipe Stat Motor" and press the **OK** key.

```
# WIPE STAT MOTOR
> STOP
```

2 In the Wipe Stat Motor submenu, select the direction that you would like the Wiping Station Motor to run and then press the **OK** key.

```
# WIPE STAT MOTOR
* NORMAL
```

The different directions that you can run the Wiping Station Motor are as follows:

- Stop - Stops the Motor running.
- Normal - Runs the Motor in the normal direction.
- Reverse - Turns the Motor in the reverse direction.

3 You will need to confirm that you want to run the Wiping Station Motor in the selected direction by pressing the **OK** key.

```
# WIPE STAT MOTOR
* NORMAL OK?
```

4 To stop the Wiping Station Motor turning, select "Stop" in the Wipe Stat Motor submenu and then press the **OK** key.

```
# WIPE STAT MOTOR
* STOP
```

Solenoid (Left or Right)

This option allows you to control the Solenoid (left or right):

1 In the Motors submenu, scroll to "Solenoid L" or "Solenoid R" and press the **OK** key.

```
# SOLENOID L
> CLOSED
```

2 In the Solenoid submenu, select "Open" to start the selected Solenoid and then press the **OK** key.

```
# SOLENOID L
* OPEN
```

3 You will need to confirm that you want to start the selected Solenoid by pressing the **OK** key.

```
# SOLENOID L
* OPEN OK?
```

4 To stop the Pump Solenoid, select "Off" in the Pump Solenoid submenu and then press the **OK** key.

```
# SOLENOID L
* CLOSED
```

Vacuum Fans (Left, Right or Center)

This option allows you to control the three Vacuum Fans (left, right or center).

1 In the Motors submenu, scroll to "Vacuum Fan L", "Vacuum Fan R" or "Vacuum Fan C" and press the **OK** key.

```
# VACUUM FAN L
> OFF
```

2 In the Vacuum Fan submenu, select "On" to start the selected Vacuum Fan and then press the **OK** key.

```
# VACUUM FAN L
* ON
```

3 You will need to confirm that you want to start the selected Vacuum Fan by pressing the **OK** key.

```
# VACUUM FAN L
* ON OK?
```

4 To stop the Vacuum Fan, select "Off" in the Vacuum Fan submenu and then press the **OK** key.

```
# VACUUM FAN L
* OFF
```

Exhaust Fans

This option allows you to control the Exhaust Fans:

1 In the Motors submenu, scroll to "Exhaust Fans" and press the **OK** key.

2 In the Exhaust Fans submenu, select "On" to start the Exhaust Fans and then press the **OK** key.

3 You will need to confirm that you want to start the Exhaust Fans by pressing the **OK** key.

4 To stop the Exhaust Fans, select "Off" in the Exhaust Fans submenu and then press the **OK** key.

PH Cooling Fans

This option allows you to control the Printhead Cooling Fans:

1 In the Motors submenu, scroll to "PH Cooling Fan" and press the **OK** key.

2 In the PH Cooling Fan submenu, select "On" to start the PH Cooling Fans and then press the **OK** key.

3 You will need to confirm that you want to start the PH Cooling Fans by pressing the **OK** key.

4 To stop the Printhead Cooling Fans, select "Off" in the PH Cooling Fan submenu and then press the **OK** key.

```
# PH COOLING FAN
* OFF
```

TUR Motor

This option allows you to control the Take-up-reel Motor:

1 In the Motors submenu, scroll to "TUR Motor" and press the **OK** key.

```
# TUR MOTOR
> OFF
```

2 In the TUR Motor submenu, select "On" to start the TUR Motor and then press the **OK** key.

```
# TUR MOTOR
* ON
```

3 You will need to confirm that you want to start the TUR Motor by pressing the **OK** key.

```
# TUR MOTOR
* ON OK?
```

4 To stop the TUR Motor, select "Off" in the TUR Motor submenu and then press the **OK** key.

```
# TUR MOTOR
* OFF
```

Pump Motors

This option allows you to control the Ink Pump Motors:

1 In the Motors submenu, scroll to "XX Pump Motor" and press the **OK** key.

```
# XX PUMP MOTOR
> STOP
```

The ink colors that correspond to each Ink Pump Motor are as follows:

- K Pump Motor - Black Ink Pump Motor.
- Lm Pump Motor - Light Magenta Ink Pump Motor.
- Lc Pump Motor - Light Cyan Ink Pump Motor.
- Y Pump Motor - Yellow Ink Pump Motor.
- M Pump Motor - Magenta Ink Pump Motor.
- C Pump Motor - Cyan Ink Pump Motor.

2 In the Pump Motor submenu, select the direction that you would like the selected Ink Pump Motor to run and then press the **OK** key.

```
# XX PUMP MOTOR
* NORMAL
```

The different directions that you can run the Ink Pump Motor are as follows:

- Stop - Stops the Motor running.
- Normal - Runs the Motor in the normal direction.
- Reverse - Turns the Motor in the reverse direction.

Make sure you have the Subtank Station visible before running the Ink Pump Motor in the "Normal" direction. This will prevent the Subtanks from overfilling and possibly exploding the Subtanks. It is also recommended NOT to run the Ink Pump Motor in the "Reverse" direction as this will cause ink in the Subtank to be pumped back into the Ink Cartridge, which could also explode if it is already full of ink.

3 You will need to confirm that you want to run the selected Ink Pump Motor in the selected direction by pressing the **OK** key.

```
# XX PUMP MOTOR
* NORMAL OK?
```

4 To stop the Ink Pump Motor turning, select "Stop" in the Pump Motor submenu and then press the **OK** key.

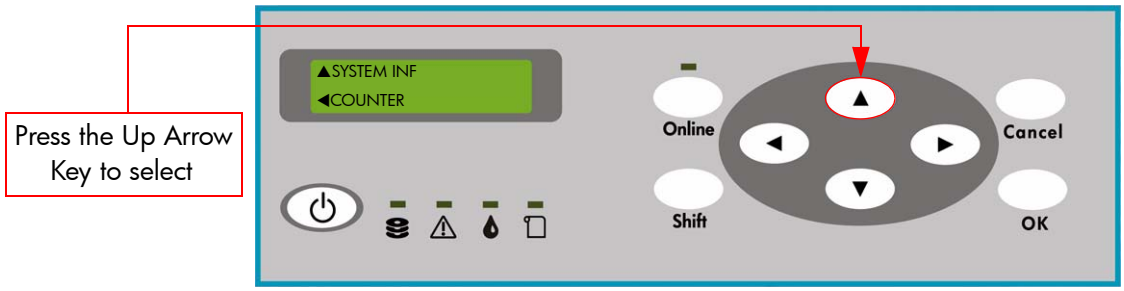
```
# XX PUMP MOTOR
* STOP
```

SYSTEM INF

This menu can be used to print various information pages. The different options available in this menu are as follows:

- System Print ⇒ Page *4-77*.
- Error Log Print ⇒ Page *4-78*.
- History Print ⇒ Page *4-78*.

To enter in to the System Information menu, enter in to the Maintenance Mode and press the **Shift** key three times and then the ▲ key.



System Print

This option allows you to turn print information relating to the system, settings, mechanical parameters and ink:

1 In the System Inf submenu, scroll to "System Print" and press the **OK** key.

```
# SYSTEM PRINT
>
```

2 You will need to confirm that you want to print the System Print by pressing the **OK** key.

```
# SYSTEM PRINT
* OK?
```

3 While the System Print is being printed, the following message will be displayed on the Front Panel.

```
# SYSTEM PRINT
* EXECUTING
```

4 To cancel the print, press the **Cancel** key.

Error Log Print

This option allows you to turn print error log information stored in the Printer:

1 In the System Inf submenu, scroll to "Error Log Print" and press the **OK** key.

2 You will need to confirm that you want to print the Error Log Print by pressing the **OK** key.

3 While the Error Log Print is being printed, the following message will be displayed on the Front Panel.

4 To cancel the print, press the **Cancel** key.

History Print

This option allows you to turn print information relating to the ink system cleaning condition which is stored in the Printer:

1 In the System Inf submenu, scroll to "History Print" and press the **OK** key.

2 You will need to confirm that you want to print the History Print by pressing the **OK** key.

3 While the History Print is being printed, the following message will be displayed on the Front Panel.

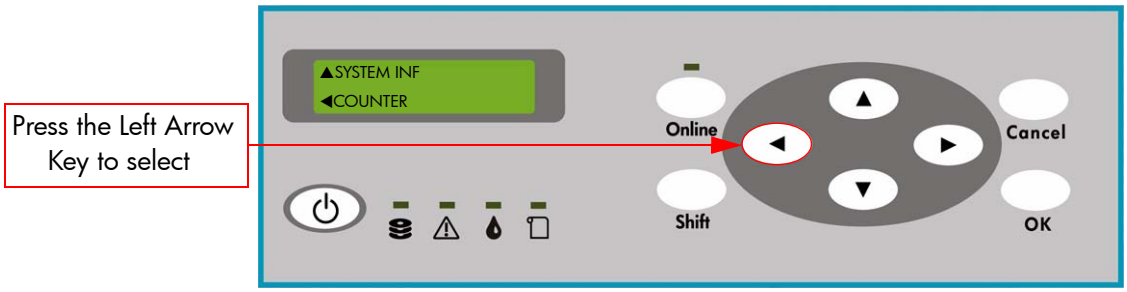
4 To cancel the print, press the **Cancel** key.

COUNTER

This menu can be used to view and reset the different counters that are used to track the usage of various parts which need to be replaced as a preventive measure. Also, this menu can be used to check if Non-HP or Expired Ink is being used in the printer. The different options available in this menu are as follows:

- Media Used ⇒ Page *4-79*.
- Prime Assembly ⇒ Page *4-80*.
- Pump Tube ⇒ Page *4-81*.
- Wiper Cleaning ⇒ Page *4-81*.
- Wiper Belt ⇒ Page *4-82*.
- Wiper Blade ⇒ Page *4-83*.
- Capping Unit ⇒ Page *4-84*.
- Scan-Axis belt ⇒ Page *4-84*.
- Non-HP Ink Used ⇒ Page *4-85*.
- Expired Ink Used ⇒ Page *4-86*.

To enter in to the Counter menu, enter in to the Maintenance Mode and press the **Shift** key three times and then the ◀ key.



Media Used

This option allows you to view and change the amount of media used in the Printer:

1 In the Counter submenu, scroll to "Media Used" and press the **OK** key to view the media used since the last reset.

```
# MEDIA USED
> 0000350m
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

```
# MEDIA USED
> 0000200m
```

3 Press the **OK** key once you have entered the new usage length.

4 If the Media Used counter needs to be reset, return to the Counter submenu, scroll to "Reset Media Used" and press the **OK** key.

```
# RESET MEDIA USED
>
```

5 You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET MEDIA USED
* OK?
```

Prime Assembly

This option allows you to view and change the usage counter related to the Prime Assemblies:

Once the counter has reached 200,000 seconds a message will appear advising you to replace the Prime Assemblies. After replacing the Prime Assemblies, make sure you reset the usage counter related to the Prime Assemblies.

1 In the Counter submenu, scroll to "Prime Assy" and press the **OK** key to view the usage counter related to the Prime Assemblies.

```
# PRIME ASSY
> 000045000sec
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

```
# PRIME ASSY
> 000053000sec
```

3 Press the **OK** key once you have entered the new usage amount.

4 If the Prime Assembly counter needs to be reset, return to the Counter submenu, scroll to "Reset Prime Assy" and press the **OK** key.

```
# RESET PRIME ASSY
>
```

5 You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET PRIME ASSY
* OK?
```

Pump Tube

This option allows you to view and change the usage counter related to the different Pump Tubes:

Once the counter has reached 250,000 seconds a message will appear advising you to replace the relevant Pump Tube. After replacing the relevant Pump Tube, make sure you reset the usage counter related to that Pump Tube.

1 In the Counter submenu, scroll to "YY Pump Tube" and press the **OK** key to view the usage counter related to the Pump Tube (YY relates to the ink color).

```
# YY PUMP TUBE
> 000125000sec
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

```
# YY PUMP TUBE
> 000153000sec
```

3 Press the **OK** key once you have entered the new usage amount.

4 If the Pump Tube counter needs to be reset, return to the Counter submenu, scroll to "Reset YY Pump" and press the **OK** key.

```
# RESET YY PUMP
>
```

5 You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET YY PUMP
* OK?
```

Wiper Cleaning

This option allows you to view and change the date of when the Wiper Cleaning Assembly was last replaced:

Once 1 year has passed since the last replacement, a message will appear advising you to replace the Wiper Cleaning Assembly. After replacing the Wiper Cleaning Assembly, make sure you reset the date related to the Wiper Cleaning Assembly.

1 In the Counter submenu, scroll to "Wiper Cleaning" and press the **OK** key to view the date of when the Wiper Cleaning Assembly was last replaced.

```
# WIPER CLEANING
> 05/05/08
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

Format: Year/Month/Day

3 Press the **OK** key once you have entered the new date.

4 If the Wiper Cleaning date needs to be reset (to today's date), return to the Counter submenu, scroll to "Reset Wipe Clean" and press the **OK** key.

5 You will need to confirm that you want to reset the date by pressing the **OK** key.

Wiper Belt

This option allows you to view and change the date of when the Wiper Belt was last replaced:

Once 1 year has passed since the last replacement, a message will appear advising you to replace the Wiper Belt. After replacing the Wiper Belt, make sure you reset the date related to the Wiper Belt.

1 In the Counter submenu, scroll to "Wiper Belt" and press the **OK** key to view the date of when the Wiper Belt was last replaced.

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

Format: Year/Month/Day

3 Press the **OK** key once you have entered the new date.

4 If the Wiper Belt date needs to be reset (to today's date), return to the Counter submenu, scroll to "Reset Wiper Belt" and press the **OK** key.

5 You will need to confirm that you want to reset the date by pressing the **OK** key.

```
# RESET WIPER BELT
* OK?
```

Wiper Blade

This option allows you to view and change the usage counter related to the Wiper Blade:

Once the counter has reached 30,000 (wipes) a message will appear advising you to replace the Wiper Blade. After replacing the Wiper Blade, make sure you reset the usage counter related to the Wiper Blade.

1 In the Counter submenu, scroll to "Wiper Blade" and press the **OK** key to view the usage counter related to the Wiper Blade.

```
# WIPER BLADE
> 0017800
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

```
# WIPER BLADE
> 0013400
```

3 Press the **OK** key once you have entered the new usage amount.

4 If the Wiper Blade counter needs to be reset, return to the Counter submenu, scroll to "Reset Wipe Blade" and press the **OK** key.

```
# RESET WIPE BLADE
>
```

5 You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET WIPE BLADE
* OK?
```

Capping Unit

This option allows you to view and change the usage counter related to the Capping Units:

Once the counter has reached 10,000 (up/down count) a message will appear advising you to replace the Capping Units. After replacing the Capping Units, make sure you reset the usage counter related to the Capping Units.

1 In the Counter submenu, scroll to "Capping Unit" and press the **OK** key to view the usage counter related to the Capping Units.

```
# CAPPING UNIT
> 0057800
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

```
# CAPPING UNIT
> 0045400
```

3 Press the **OK** key once you have entered the new usage amount.

4 If the Capping Unit counter needs to be reset, return to the Counter submenu, scroll to "Reset Cap Unit" and press the **OK** key.

```
# RESET CAP UNIT
>
```

5 You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET CAP UNIT
* OK?
```

Scan-Axis Belt

This option allows you to view and change the usage counter related to the Scan-Axis Belt:

Once the counter has reached 1,000,000 (scans) a message will appear advising you to replace the Scan-Axis Belt. After replacing the Scan-Axis Belt, make sure you reset the usage counter related to the Scan-Axis Belt.

1 In the Counter submenu, scroll to "Scan Axis Belt" and press the **OK** key to view the usage counter related to the Scan-Axis Belt.

```
# SCAN AXIS BELT
> 0057800
```

2 Use the ▲ and ▼ keys to change the digits and use the ◀ and ▶ keys to select the digits.

```
# SCAN AXIS BELT
> 0045400
```

3 Press the **OK** key once you have entered the new usage amount.

4 If the Scan-Axis Belt counter needs to be reset, return to the Counter submenu, scroll to "Reset Scan Belt" and press the **OK** key.

```
# RESET SCAN BELT
>
```

5 You will need to confirm that you want to reset the counter by pressing the **OK** key.

```
# RESET SCAN BELT
* OK?
```

Non-HP Ink Used

This option allows you to view whether Non-HP Ink has been used in the Printer:

1 In the Counter submenu, scroll to "Non-HP Ink Used" and press the **OK** key to view whether Non-HP ink has been used in the Printer.

```
# NON-HP INK USED
# XX > YES
```

XX: Ink Color

2 If Non-HP ink has been used in some or all of the colors, then you can check which date the Non-HP ink was used. Return to the Counter submenu, scroll to "Non-HP Ink Date" and press the **OK** key.

```
# NON-HP INK DATE
# XX > 06/12/22
```

Format: Year/Month/Day

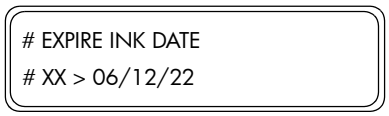
Expired Ink Used

This option allows you to view whether expired ink has been used in the Printer:

1 In the Counter submenu, scroll to "Expire Ink Used" and press the **OK** key to view whether expired ink has been used in the Printer.

XX: Ink Color

2 If expired ink has been used in some or all of the colors, then you can check which date the expired ink was used. Return to the Counter submenu, scroll to "Expire Ink Date" and press the **OK** key.

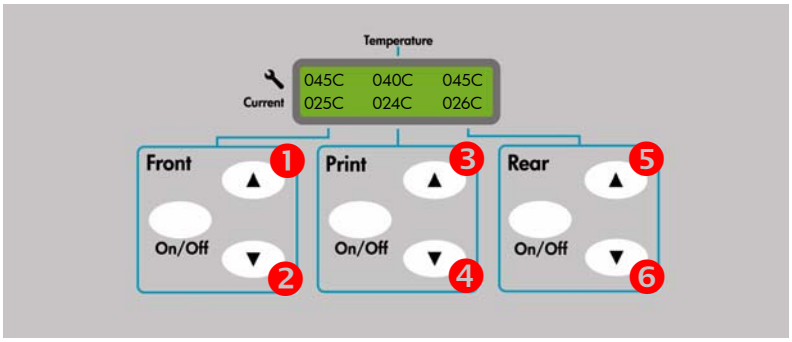


Format: Year/Month/Day

Heater Panel Maintenance Mode

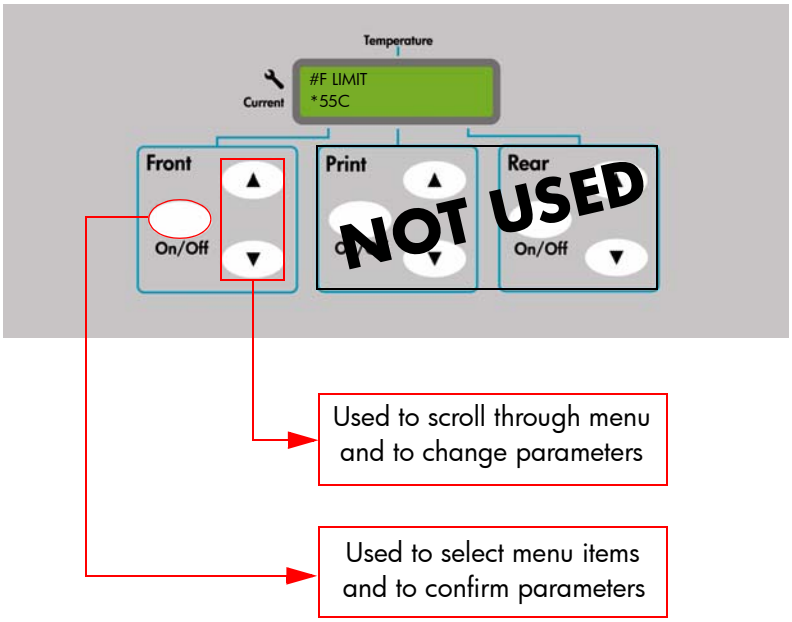
Entering Heater Panel Maintenance Mode

Press the following keys on the Heater Panel in the order shown in the drawing:



Basic Menu Operation

To operate the Heater Panel Maintenance Menu, only the "Front" keys are used.



Heater Panel Maintenance Menu

The different menu options that can be selected in the Heater Panel Maintenance Mode are as follows:

Menu Item	Description	Setting Options
F LIMIT	Front Heater maximum temperature limit preset by User.	15 to 60°C
R LIMIT	Rear Heater maximum temperature limit preset by User.	15 to 60°C
P LIMIT	Print Heater maximum temperature limit preset by User.	15 to 60°C
STANDBY TEMP	Preset temperature for standby state	15 to 40°C
HEATER TEST	Turn the Heaters ON/OFF	On or OFF
RESET PARAM	Return all parameters to the factory default settings	Yes or No
EXIT	Exit from the Maintenance Mode	Yes or No

Adjustments and Calibrations 5

Adjustments and Calibrations 5-2
Adjustments 5-2
- Belt Tension Adjustment 5-3
- Carriage Height Adjustment 5-5
- Scan-Axis Belt Tension Adjustment 5-9
- Paper-Axis Belt Tension Adjustment 5-11
- Wiping Station Height Adjustment 5-13
- Wiper Belt Tension Adjustment 5-16
- Wiper Blade Height Adjustment 5-17
- Capping Station Height Adjustment 5-20
- Carriage Shield Height Adjustment 5-22
- Wiping Position Calibration 5-23
- Capping Position Calibration 5-25
- Line Sensor Calibration (Side Margin) 5-27
- Line Sensor Calibration (Top Margin) 5-28

Adjustments and Calibrations

The Printer requires certain adjustments and calibration procedures that must be performed under certain conditions.

REMEMBER THAT CERTAIN ADJUSTMENTS AND CALIBRATIONS ARE REQUIRED EVEN IF AN ASSEMBLY HAS BEEN DISASSEMBLED TO GAIN ACCESS TO ANOTHER ASSEMBLY OR COMPONENT.

Adjustments refer to procedures that require physical mechanical fine tuning of the different components in the Printer.

Calibrations refer to procedures that require entering values through the Front Panel in order to fine tune the components in the Printer.

All adjustment procedures that need to be done after replacing a Printhead are contained in Chapter 3.

Adjustments

1. Belt Tension Adjustment ⇒ Page *5-3*.
2. Carriage Height Adjustment ⇒ Page *5-5*.
3. Scan-Axis Belt Tension Adjustment ⇒ Page *5-9*.
4. Paper-Axis Belt Tension Adjustment ⇒ Page *5-11*.
5. Wiping Station Height Adjustment ⇒ Page *5-13*.
6. Wiper Belt Tension Adjustment ⇒ Page *5-16*.
7. Wiper Blade Height Adjustment ⇒ Page *5-17*.
8. Capping Station Height Adjustment ⇒ Page *5-20*.
9. Carriage Shield Height Adjustment ⇒ Page *5-22*.

Calibrations

1. Wiping Position Calibration ⇒ Page *5-23*.
2. Capping Position Calibration ⇒ Page *5-25*.
3. Side Margin Position Calibration ⇒ Page *5-27*.
4. Top Margin Position Calibration ⇒ Page *5-28*.

Belt Tension Adjustment

This adjustment must be performed whenever:

- Carriage Assembly is disassembled or replaced.
- Carriage Belt is disassembled or replaced.

Be very careful when handling the Carriage Belt because you could easily cut yourself.

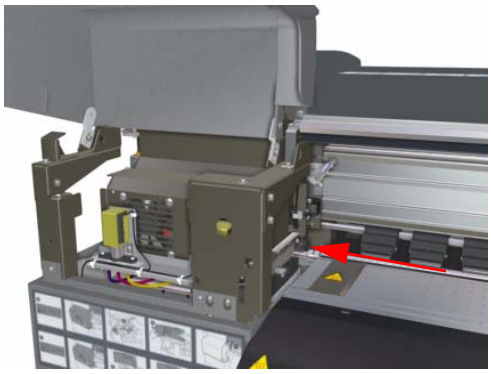
Perform the Belt Tension Adjustment as follows:

1 Make sure that the Carriage Belt is correctly installed.

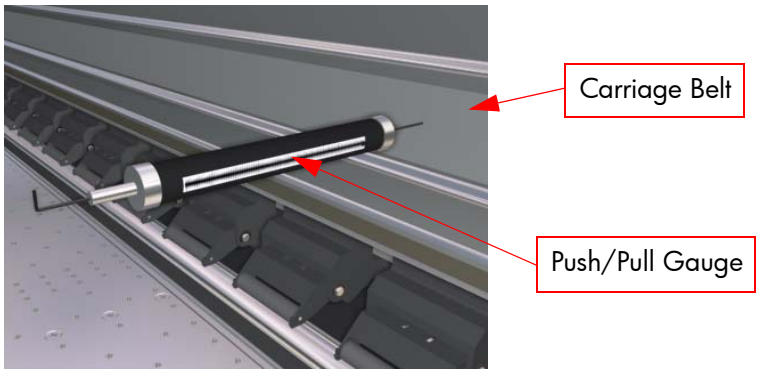
Make sure that the Carriage is Uncapped before performing the following steps. Trying to move the Carriage out of the Capping Station while it is still capped will cause damage to the Printheads.

2 Move the Carriage to the Wiping Station and Capping Station several times to make sure that the Carriage Belt does not move vertically on the Tension Pulley. If necessary, adjust the slant of the Tension Pulley by tightening or loosening the screws.

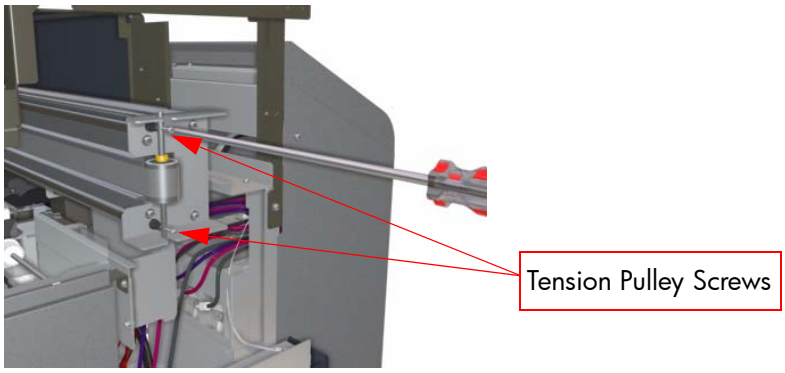
3 Move the Carriage to the Capping Station.



4 Using the Push/Pull Gauge, measure the tension in the middle of the Carriage Belt. The tension measured should be **150 g**.



5 If the tension is below 150 g, then you must tighten the Tension Pulley screws. If the tension is above 150 g, then you must loosen the Tension Pulley screws.



Carriage Height Adjustment

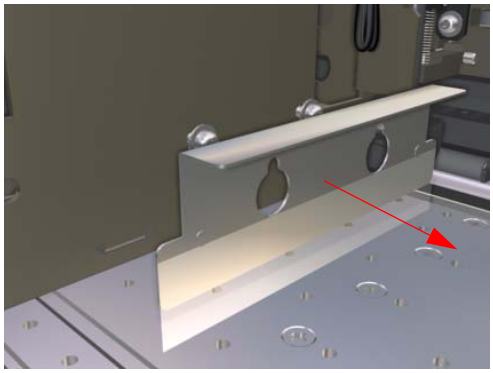
This adjustment must be performed whenever:

- Carriage Assembly is disassembled or replaced.

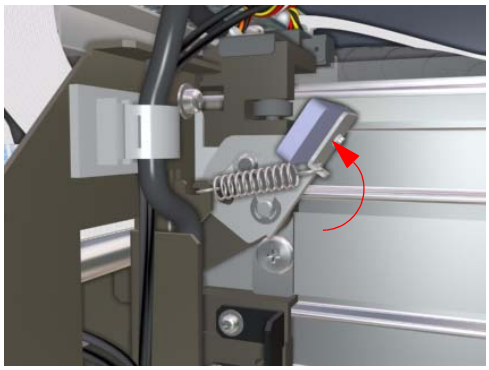
For this adjustment, you will need the Carriage Height Adjustment Tools.

Perform the Carriage Height Adjustment as follows:

1. Make sure that the following parts have been removed:
   - Upper Side Cover (Right).
   - Top Side Cover (Right).
   - Capping Door.
   - Cooling Fan Assembly.
2. Remove the Carriage Shields from both sides of the Carriage Assembly.

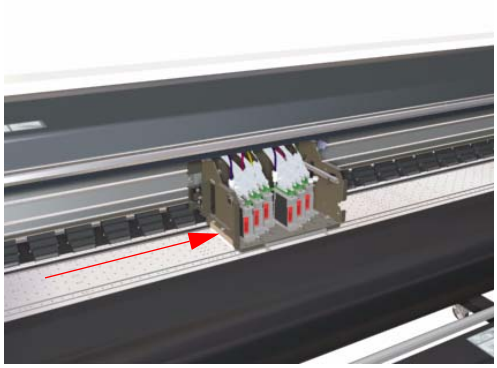


3. Make sure that the Printhead Height Lever is in the upper position (so that the Printhead height is actually in the lower position).

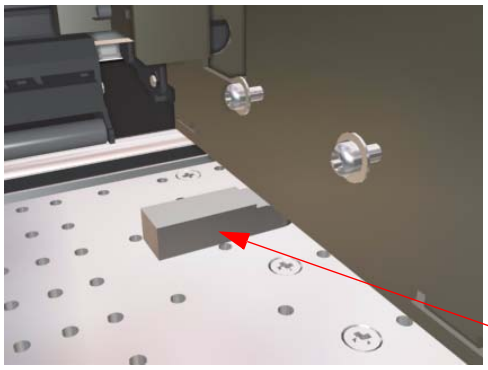


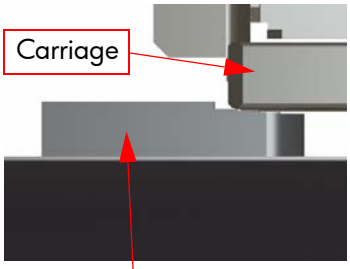
Make sure that the Carriage is Uncapped before performing the following steps. Trying to move the Carriage out of the Capping Station while it is still capped will cause damage to the Printheads.

4 Move the Carriage Assembly to the middle of the Center Platen.

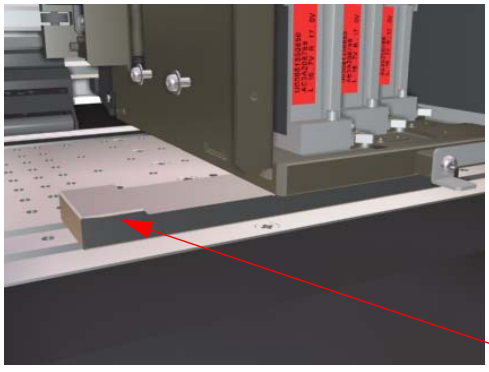


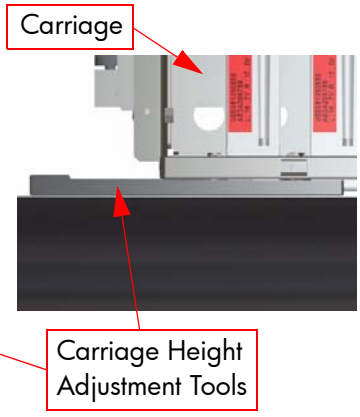
5 Insert the Carriage Height Adjustment Tools (round end) under the rear part of the Carriage (both sides) until the third step.



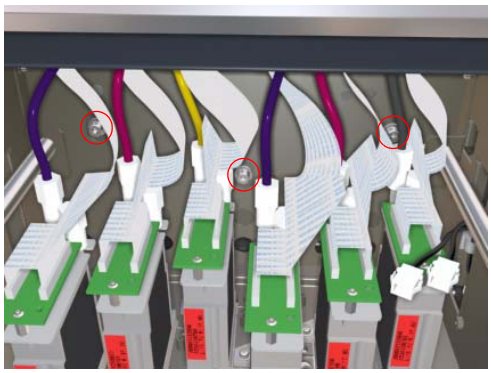


6 Insert the Carriage Height Adjustment Tools (square end) under the front part of the Carriage (both sides) until the second step.

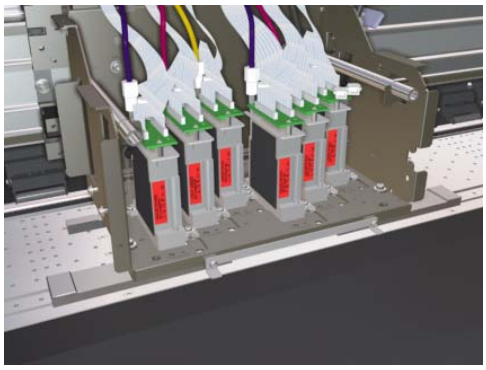




7 Loosen the three screws that secure the Carriage base to the main Carriage Assembly.

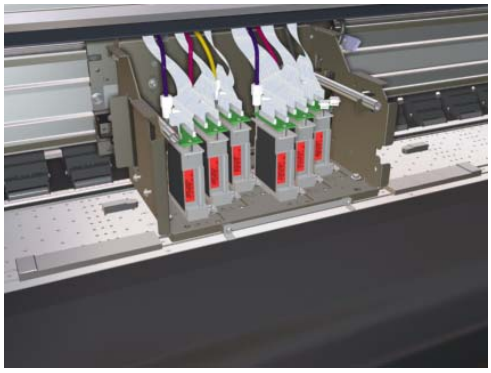


8 Lower the Carriage onto the Carriage Height Tools inserted in the previous steps.



9 With the Carriage Height Tools still in position, tighten the three screws that secure the Carriage base to the main Carriage Assembly. Tighten the left screw first, then the right screw and then the middle screw.

10 Remove the Carriage Height Tools from the Carriage base.



11 Insert the Carriage Height Tools again to check that the overall error is within ±0.2 mm. If the error exceeds this range, you will need to adjust the Carriage height again.

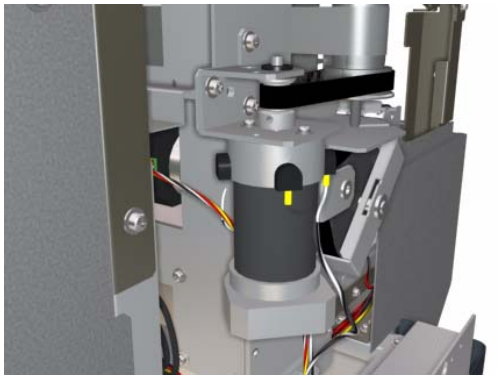
Scan-Axis Belt Tension Adjustment

This adjustment must be performed whenever:

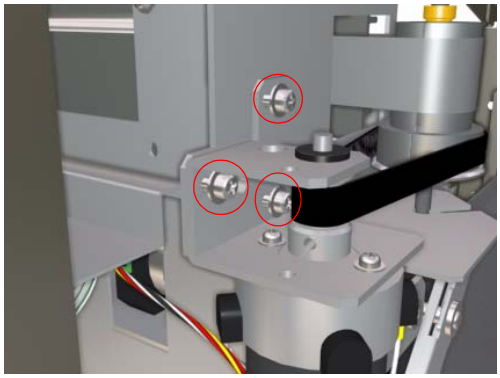
- Scan-Axis Motor is disassembled or replaced.
- Scan-Axis Belt is disassembled or replaced.

Perform the Scan-Axis Belt Tension Adjustment as follows:

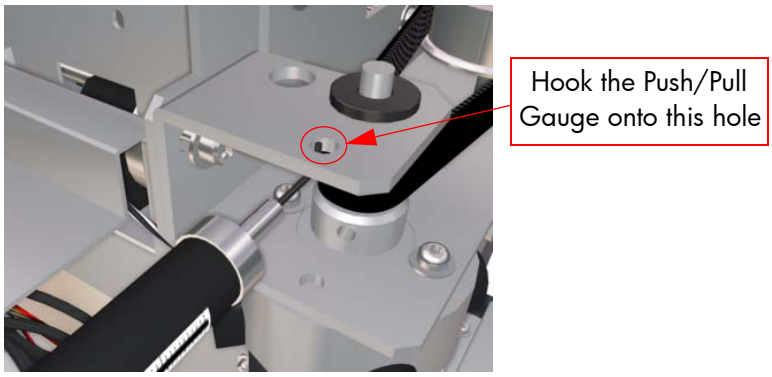
1. Make sure that the Scan-Axis Motor and Belt are correctly installed.



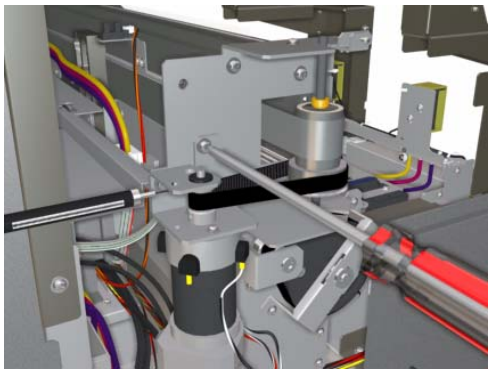
2. Loosen three screws that secure the Scan-Axis Motor Bracket to the Printer.



3. Hook the Push/Pull Gauge onto the Scan-Axis Motor Bracket and tension the Scan-Axis Belt to a force of 41.0 N ±2.0 N (4.18 kgf ±0.2 kgf).



4 While tensioning the Scan-Axis Belt, tighten the three screws that you loosened in step 2.



Paper-Axis Belt Tension Adjustment

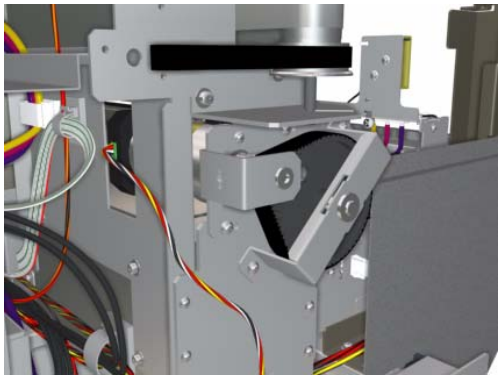
This adjustment must be performed whenever:

- Paper-Axis Motor is disassembled or replaced.
- Paper-Axis Belt is disassembled or replaced.

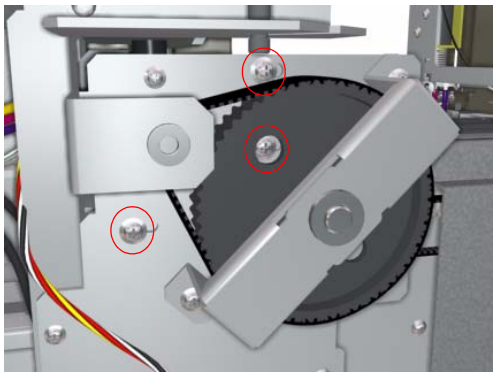
In order to adjust the Paper-Axis Belt, you will need to first remove the Scan-Axis Motor.

Perform the Paper-Axis Belt Tension Adjustment as follows:

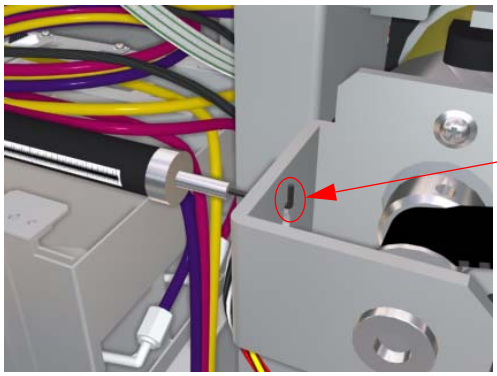
1 Make sure that the Paper-Axis Motor and Belt are correctly installed.



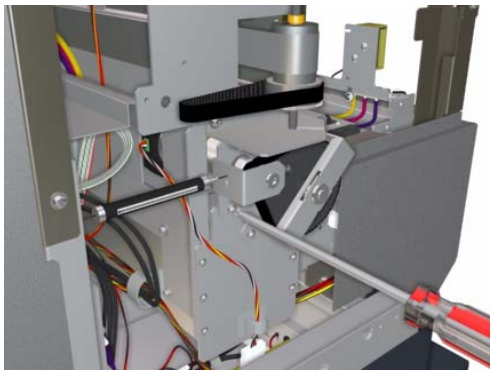
2 Loosen three screws that secure the Paper-Axis Motor Bracket to the Printer.



3 Hook the Push/Pull Gauge onto the Paper-Axis Motor Bracket and tension the Paper-Axis Belt to a force of 49.0 N ±2.0 N (5.0 kgf ±0.2 kgf).



4 While tensioning the Paper-Axis Belt, tighten the three screws that you loosened in step 2.



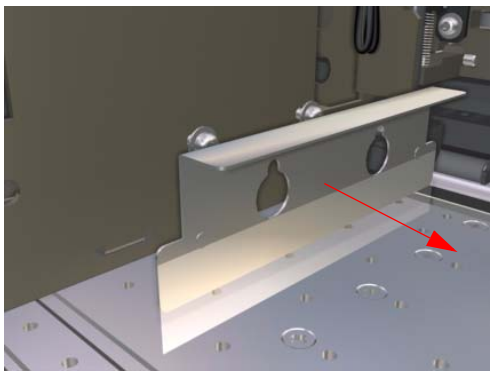
Wiping Station Height Adjustment

This adjustment must be performed whenever:

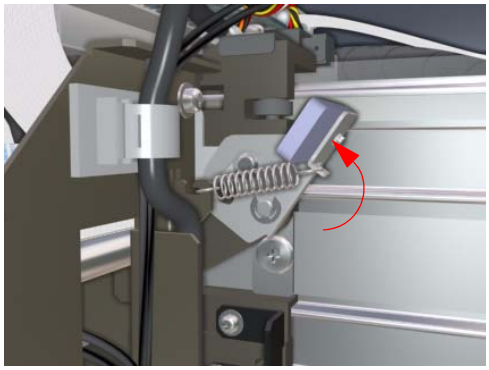
- Wiping Station is disassembled or replaced.

Perform the Wiping Station Height Adjustment as follows:

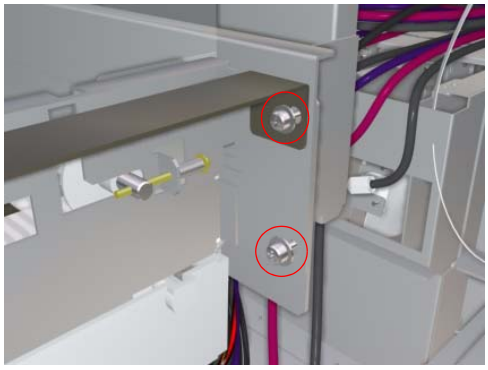
1. Make sure that the Wiping Station is correctly installed.
2. Remove the Carriage Shields from both sides of the Carriage Assembly.



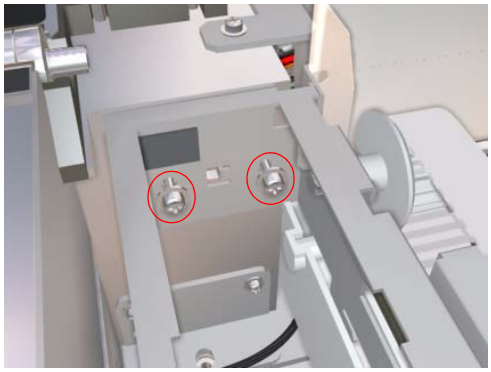
3. Make sure that the Printhead Height Lever is in the upper position (so that Printhead height is actually in the lower position).



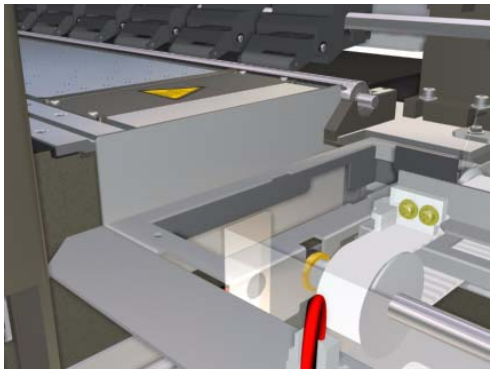
4. Loosen two screws that secure the Wiping Station on the right hand side.



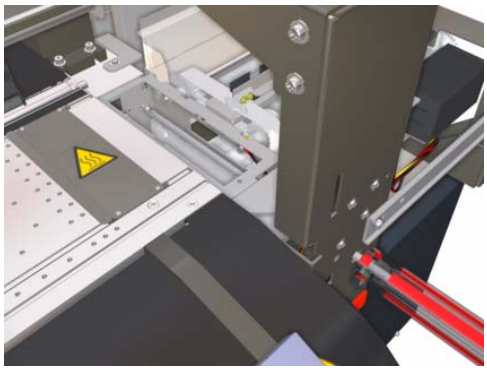
5 Loosen two screws that secure the Wiping Station on the left hand side.



6 Adjust the Wiping Station so that it is positioned just below the Center Platen.

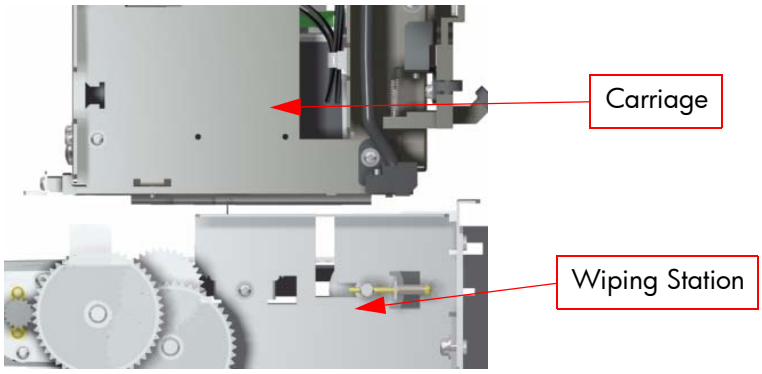


7 Tighten the four screws that you loosened in the previous steps.



Make sure that the Carriage is Uncapped before performing the following step. Trying to move the Carriage out of the Capping Station while it is still capped will cause damage to the Printheads.

8 Gently move the Carriage to the Wiping Station, making sure that the Carriage does not hit the Wiping Station. There should be a slight gap between the Carriage and the Wiping Station.



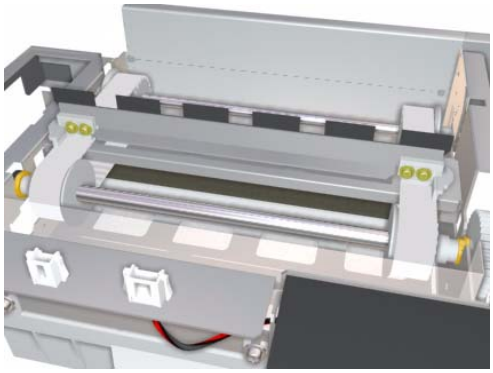
Wiper Belt Tension Adjustment

This adjustment must be performed whenever:

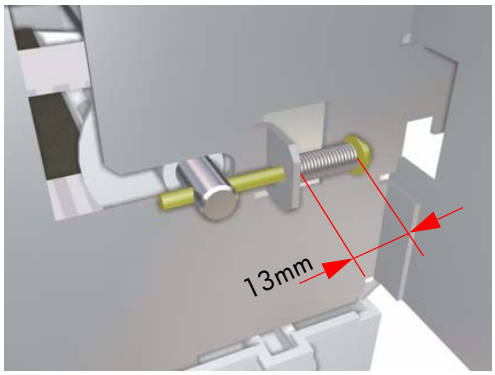
- Wiper Blade is disassembled or replaced.
- Wiper Belts are disassembled or replaced.

Perform the Wiper Belt Height Adjustment as follows:

1 Make sure that the Wiper Belts are correctly installed.



2 Tighten or loosen the Tension screw (for each Wiper Belt) until the remaining length of the screw is 13 mm.



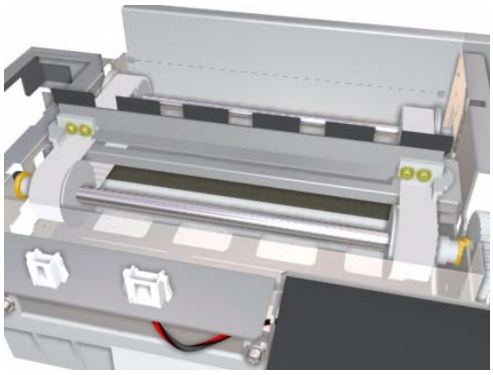
Wiper Blade Height Adjustment

This adjustment must be performed whenever:

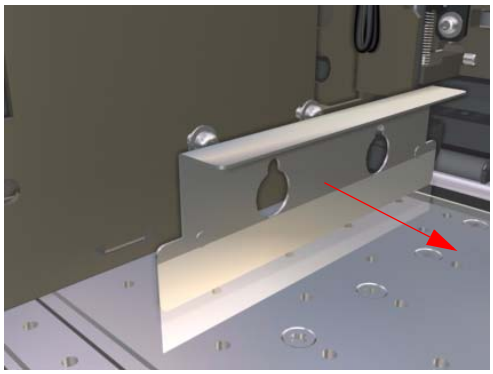
- Wiping Station is disassembled or replaced.
- Wiper Blade is disassembled or replaced.
- Wiper Belts are disassembled or replaced.

Perform the Wiper Blade Height Adjustment as follows:

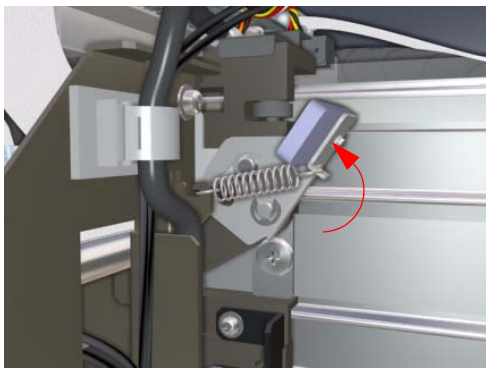
1. Make sure that the Wiping Station and the Wiper Belts are correctly installed and adjusted.
2. Make sure that the Wiper Blade is correctly installed.



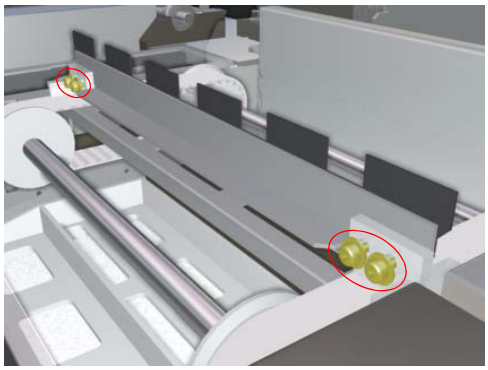
3. Remove the Carriage Shields from both sides of the Carriage Assembly.



4. Make sure that the Printhead Height Lever is in the upper position (so that Printhead height is actually in the lower position).

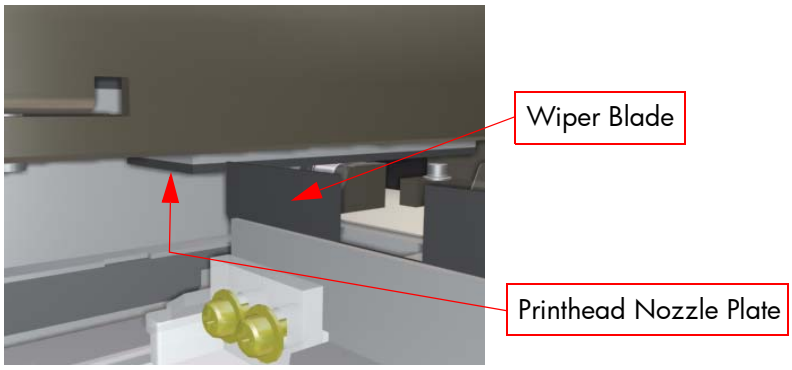


5 Loosen four screws that secure the Wiper Blade to the Wiper Blades.

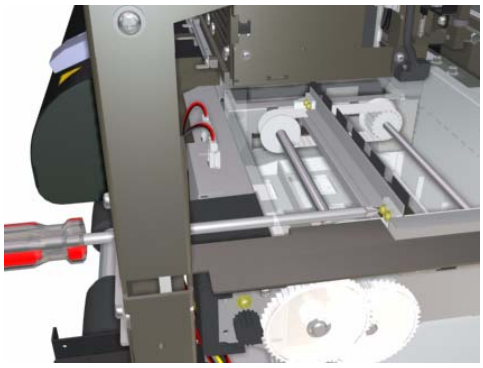


Make sure that the Carriage is Uncapped before performing the following step. Trying to move the Carriage out of the Capping Station while it is still capped will cause damage to the Printheads.

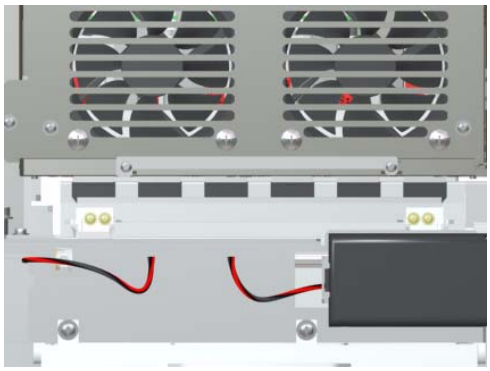
6 Move the Carriage to the Wiping Station and align the top edge of the Wiper Blade with the top edge of the Printhead Nozzle Plate (black part).



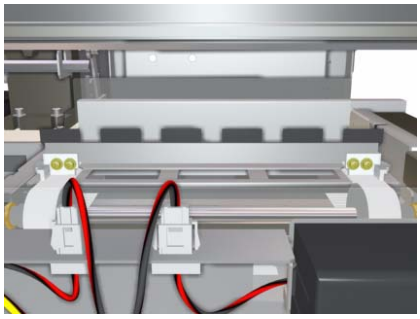
7 While holding the Wiper Blade in position, tighten the two screws that you loosened in a previous step.

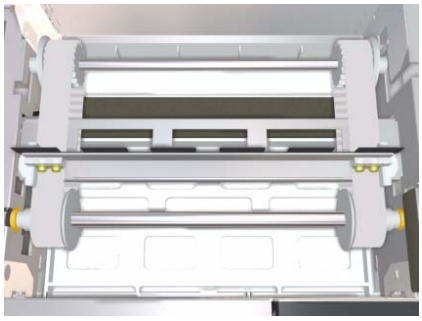


8 Manually rotate the Wiper Blade using the Wiping Station Gear and check that the Wiper Blade touches the Printheads evenly.



9 Also check that the Wiper Blade is level and not slanted.





Capping Station Height Adjustment

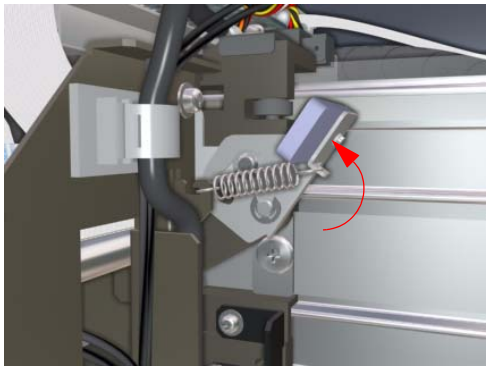
This adjustment must be performed whenever:

- Capping Station is disassembled or replaced.

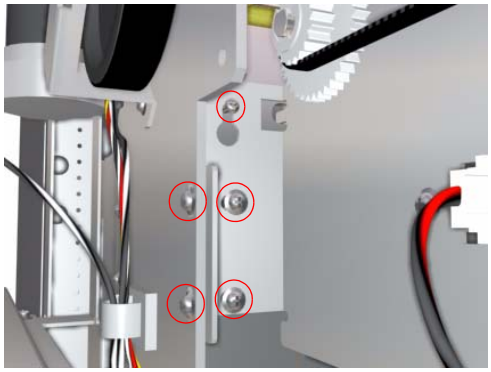
For this adjustment, you will need the Capping Height Tools.

Perform the Capping Station Height Adjustment as follows:

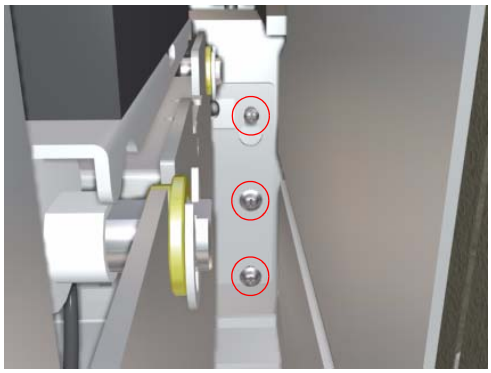
1. Make sure that the Capping Station is correctly installed and that the Carriage is moved to the Capping Station.
2. Make sure that the Printhead Height Lever is in the upper position (so that Printhead height is actually in the lower position).



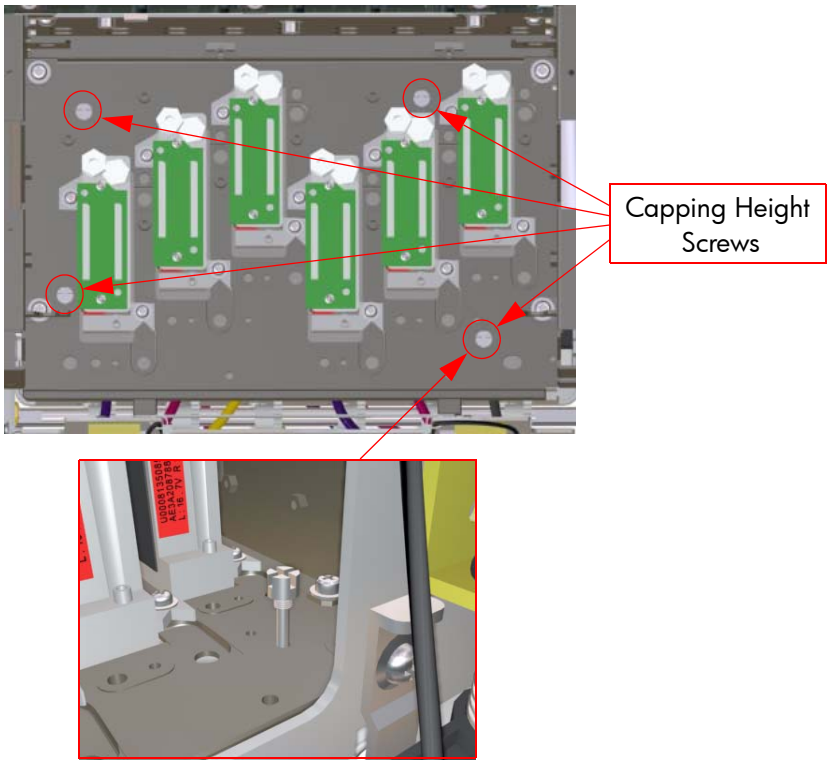
3. Loosen five screws from the left hand side of the Capping Station.



4. Loosen three screws from the right hand side of the Capping Station.



5 Install the four Capping Height screws into the Carriage in the positions shown below.



6 Adjust the height of the Capping Station so that at least three Capping Height screws are touching the top part of the capping Station.

7 While holding the Capping Station in position, tighten the screws that you loosened in the previous steps.

8 Remove the four Capping Height Screws from the Carriage.

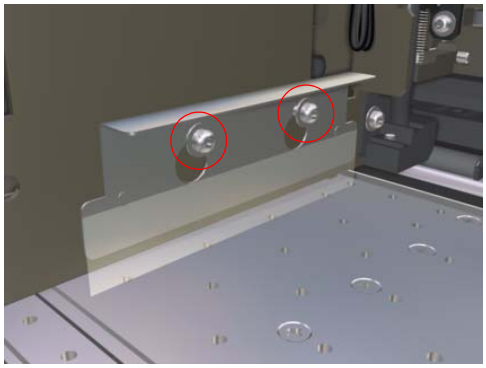
Carriage Shield Height Adjustment

This adjustment must be performed whenever:

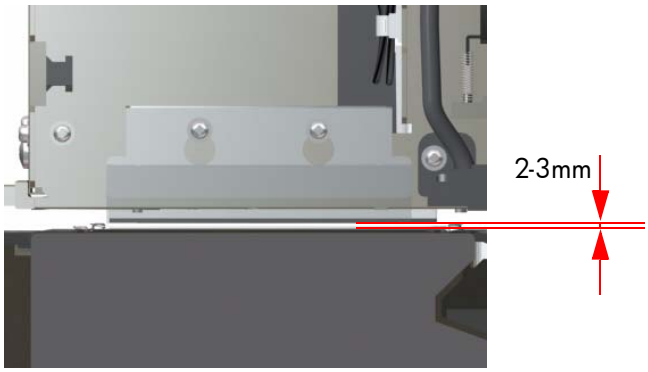
- Carriage Shields are disassembled or replaced.

Perform the Carriage Shield Height Adjustment as follows:

1. Make sure that the Carriage Shields are correctly installed.
2. Loosen 2 screws that secure the Carriage Shield to the Carriage.



3. Adjust the Carriage Shield so that there is a 2-3 mm clearance between the Carriage Shield and the Center Platen.



4. While holding the Carriage Shield in position, tighten the two screws that you loosened in a previous step.

Wiping Position Calibration

This calibration must be performed whenever:

- Wiping Station is disassembled or replaced.
- Wiper Blade is disassembled or replaced.
- Wiper Belts are disassembled or replaced.

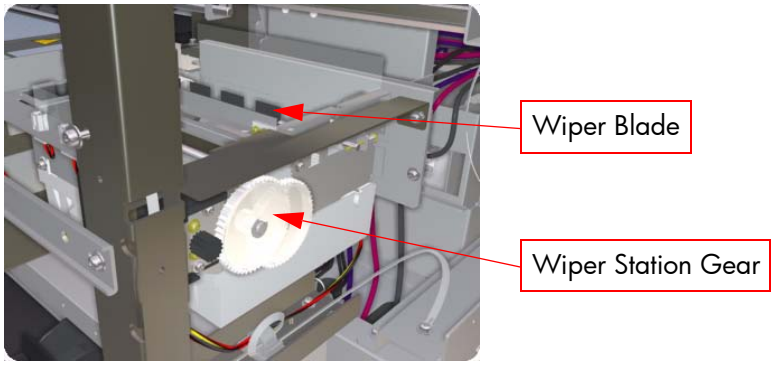
Perform the Wiping Position Calibration as follows:

1. Enter into the Maintenance Mode ⇒ Page *4-7*.
2. Move the Carriage Assembly to the Wiping Station ⇒ Page *4-18*.
3. Enter into the "Wipe Position" Menu ⇒ Page *4-13*.

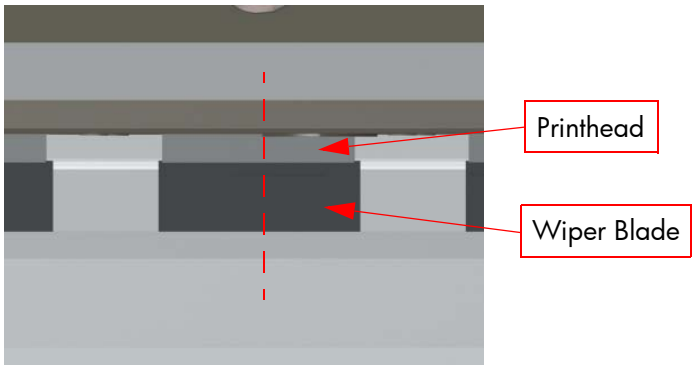
```
# WIPE POSITION
> +0.0 mm
```

This adjustment must be performed when the Carriage is at the Wiping Station. Do NOT move the Carriage when the Wiper Blade is raised as this could damage the Printheads.

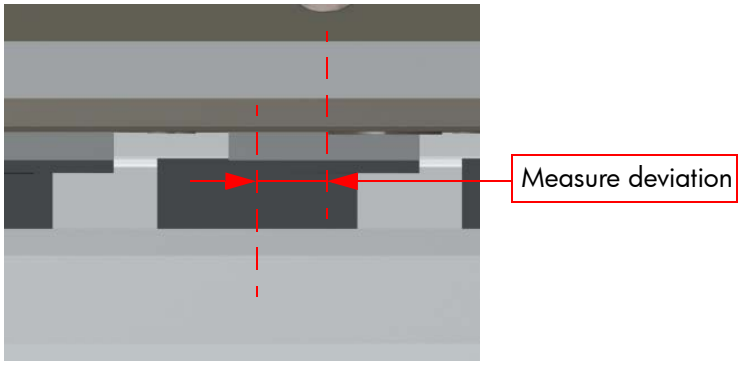
4. Manually rotate the Wiper Blade using the Wiping Station Gear until the Wiper Blade touches the Printheads (image is shown without the Carriage positioned in the Wiping Station). Remove the necessary covers in order to get access to the Wiping Station Gear.



5. Check that the center of the Wiper Blades are aligned with the center of the Printheads.

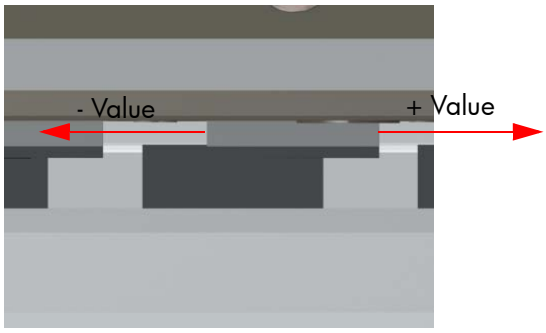


6 If the center of the Wiper Blades are **not** aligned with the center of the Printheads, you will need to visually estimate the deviation between the Wiper Blades and the Printheads.



7 Manually rotate the Wiper Blades using the Wiping Station Gear so that the Wiper Blades are lowered and **not** touching the Printheads.

8 Enter the deviation measured using the ▲ and ▼ keys to change the digits and the ◀ and ▶ keys to select the digits. If the Printheads are on the right side of the Wiper Blades, then enter a - value, and if the Printheads are on the left side of the Wiper Blades, then enter a + value.



9 Press the **OK** key once you have entered the deviation value.

10 Check again that the center of the Wiper Blades are aligned with the center of the Printheads. If they are still not aligned, then repeat the procedure from step 4.

11 Once the Wiping position is aligned, clean the edges of the Wiper Blades with a swab dipped in Wiping Liquid.

Capping Position Calibration

This calibration must be performed whenever:

- Capping Station is disassembled or replaced.
- Capping Unit is disassembled or replaced.

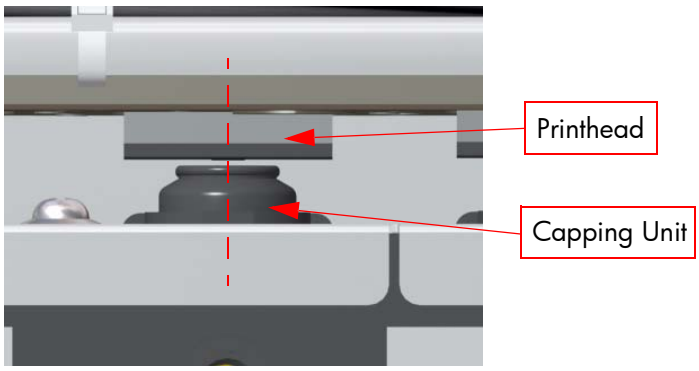
Perform the Capping Position Calibration as follows:

1. Enter into the Maintenance Mode ⇒ Page *4-7*.
2. Move the Carriage Assembly to the Capping Station (if not already at the Capping Station) ⇒ Page *4-18*.
3. If the Printheads are capped, uncap them ⇒ Page *4-43*.
4. Enter into the "Cap Position" Menu ⇒ Page *4-13*.

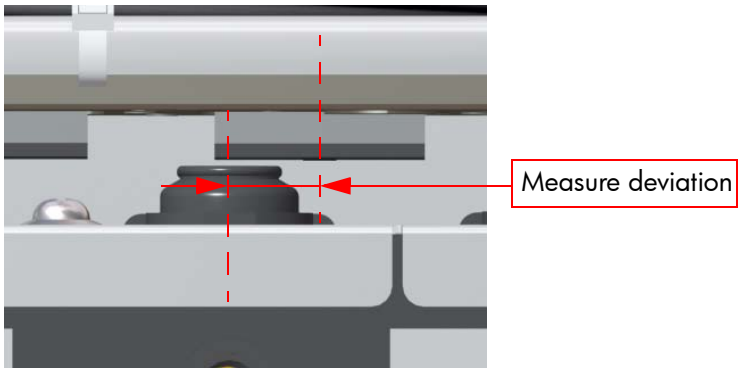
```
# CAP POSITION
> +0.0 mm
```

This adjustment must be performed when the Printheads have been uncapped. Do NOT move the Carriage when the Printheads are capped as this could damage the Printheads.

5. Visually check that the center of the Capping Units are aligned with the center of the Printheads.

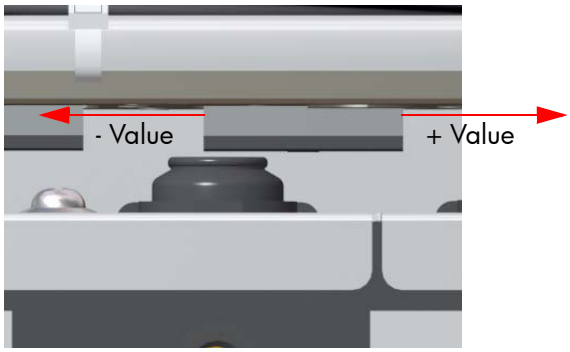


6. If the center of the Capping Units are **not** aligned with the center of the Printheads, you will need to visually estimate the deviation between the Capping Units and the Printheads.



7 Enter the deviation measured using the ▲ and ▼ keys to change the digits and the ◀ and ▶ keys to select the digits. If the Printheads are on the right side of the Capping Units, then enter a - value, and if the Printheads are on the left side of the Capping, then enter a + value.

```
# CAP POSITION
* +0.3 mm
```



8 Press the **OK** key once you have entered the deviation value.

9 Open the Rear Cover and close it again so that the Carriage adjusts itself in relation to the Capping Station.

10 Check again that the center of the Capping Units are aligned with the center of the Printheads. If they are still not aligned, then repeat the procedure from step 6.

11 Once the Capping position is aligned, move the Carriage Assembly to the Home Position ⇒ Page *4-18* or power Off and On the Printer.

Line Sensor Calibration (Side Margin)

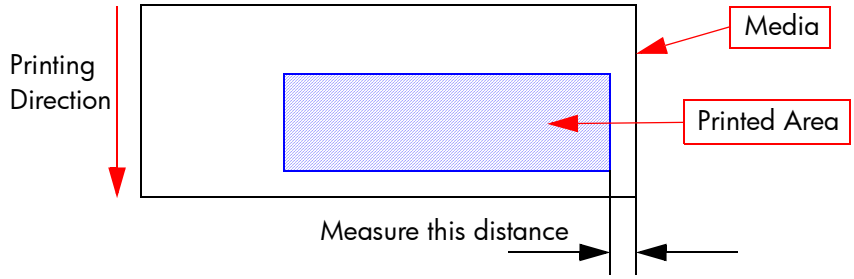
This calibration allows you to correct the value for the side margin position.

This calibration must be performed whenever:

- Line Sensor is disassembled or replaced.
- Black Printhead is disassembled or replaced.

Perform the Side Margin Position Calibration as follows:

1. Enter into the Maintenance Mode ⇒ Page *4-7*.
2. Print the Adjust Pattern ⇒ Page *4-10*.
3. Measure the side margin using a ruler. If the distance measured is more or less than 5 mm, then the side margin value will need to be changed.



4. Enter into the "LS Adj Side Val" Menu ⇒ Page *4-14*.

```
# LS ADJ SIDE VAL
> +0.0 mm
```

5. Determine the side margin value to be entered by subtracting the distance measured from the specified side margin value of 5 mm. For example, if the distance measured was 7 mm, then you subtract 7 mm from 5 mm and you get a result of +2 mm. If the distance measured was 2 mm, then you subtract 2 mm from 5 mm and you get a result of -3 mm.
6. Enter the side margin value using the ▲ and ▼ keys to change the digits and the ◀ and ▶ keys to select the digits.

```
# LS ADJ SIDE VAL
* +3.0 mm
```

7. Press the **OK** key once you have entered the side margin value.

Line Sensor Calibration (Top Margin)

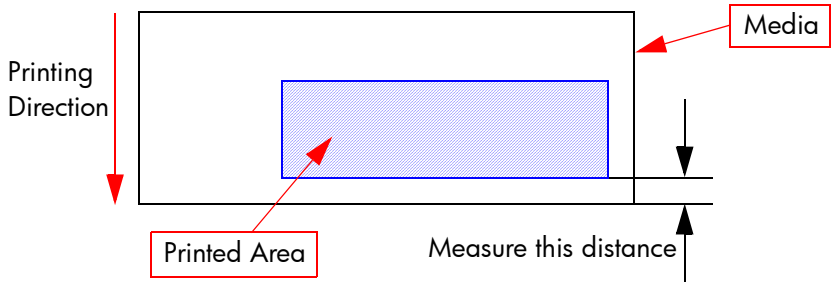
This calibration allows you to correct the value for the top margin position.

This calibration must be performed whenever:

- Line Sensor is disassembled or replaced.
- Black Printhead is disassembled or replaced.

Perform the Top Margin Position Calibration as follows:

1. Enter into the Maintenance Mode ⇒ Page *4-7*.
2. Print the Adjust Pattern ⇒ Page *4-10*.
3. Measure the top margin using a ruler. If the distance measured is more or less than 5 mm, then the top margin value will need to be changed.



4. Enter into the "LS Adj Top Val" Menu ⇒ Page *4-14*.

```
# LS ADJ TOP VAL
> +0.0 mm
```

5. Determine the top margin value to be entered by subtracting the distance measured from the specified side margin value of 5 mm. For example, if the distance measured was 8 mm, then you subtract 8 mm from 5 mm and you get a result of +3 mm. If the distance measured was 3 mm, then you subtract 3 mm from 5 mm and you get a result of -2 mm.
6. Enter the top margin value using the ▲ and ▼ keys to change the digits and the ◀ and ▶ keys to select the digits.

```
# LS ADJ TOP VAL
* +2.0 mm
```

7. Press the **OK** key once you have entered the top margin value.

Print Quality 6

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Print Quality

Print Quality Troubleshooting Actions

For some Print Quality problems, a Call Agent can try and troubleshoot the Printer by requesting the Customer to perform certain actions. Using this process, most problems can be resolved without the need of an on-site visit.

When faced with a Print Quality problem, perform the following actions in order to resolve the problem:

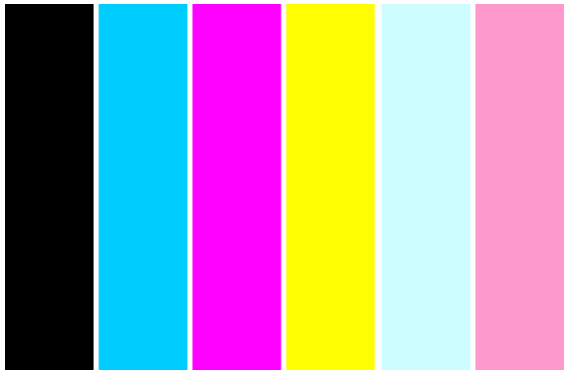
1. Printer Configuration:
   - Check that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.
   - Make sure that the correct adjustments have been made for each media.
2. Perform the Printhead Recovery procedure.
3. Media:
   - Select the correct media type through the front panel when loading it.
   - Make sure that HP or HP-approved media is being used.
4. Check if the latest version of the firmware is installed. If not, install the latest firmware revision.
5. For further information, refer directly to the Troubleshooting section that covers the different Print Quality problems.

Print Quality General Advice

1. Performing the Daily Maintenance ensures that the Printheads stay in a good condition and the nozzles don't get blocked.
2. Make sure that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.
3. Roll media usually gives better Print Quality than a single sheet of the same type of media.
4. The most appropriate print quality settings must be used for the current purpose.
5. Check that the environmental conditions (temperature, humidity) are within the temperature/humidity range as specified for the Printer (refer to the User's Guide for further information).
6. Remember that certain print quality problems can be solved by:
   - Performing the Printhead Recovery procedure.
   - Adjusting the Media Advance.

Using the IQ Print to Troubleshoot

The IQ Print can be used to check for Print Quality problems (like banding) and can be used to isolate the root cause of the problem.



1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

PRINTER READY
ROLL: 64/PAPER

2 When the following screen is displayed on the Front Panel, press the **Shift** key twice.

▲INK	MEDIA REG▼
◀MEDIA	M.ADV▶

3 When the following screen is displayed on the Front Panel, press the ◀ key to enter into the Adjust Menu.

▲PRINTER	SETUP▼
◀ADJUST	

4 In the Adjust submenu, scroll to "Test Prints" and press the **OK** key.

TEST PRINTS
> IQ PRINT

5 In the Test Prints submenu, scroll to "IQ Print" and press the **OK** key.

TEST PRINTS
* IQ PRINT

6 You will need to confirm that you want to print the IQ Print by pressing the **OK** key.

TEST PRINTS
* IQ PRINT OK?

7 The Printer will start to print the IQ Print and the following message will appear on the Front Panel.

```
# TEST PRINTS
* EXECUTING
```

If problems are found in the Test print, try the following:

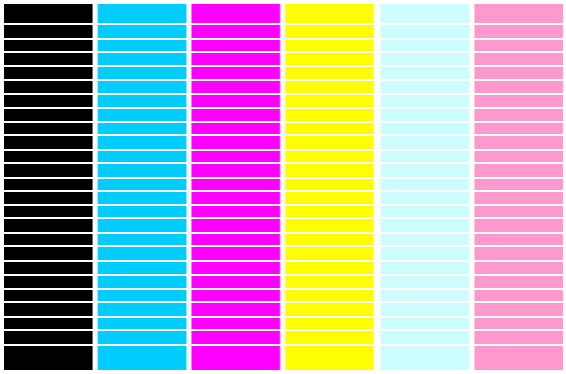
Banding in One or Several Colors

If the problem detected is banding in one or several colors, it is more than likely that the nozzles are either blocked or misfiring.

In this situation it is recommended to perform the Printhead Recovery procedure ⇒ Refer to the User's Guide.

Banding in ALL the Colors

If the problem detected is banding across ALL the colors, it is more than likely that the feed adjust is not correct for the media currently loaded.



In this situation it is recommended to perform the Media Advance adjustment on the media that is currently being used ⇒ Refer to the User's Guide.

Troubleshooting Print Quality Problems

Horizontal Lines Across the Image (Banding)

Description of problem

When you look at the image you have printed, there are horizontal lines across the image. Shown below is an example of what you might see if you have this problem:

Corrective Action

1. Check that the appropriate print quality settings are being used and reprint the image.
2. If not already done so, perform the Printhead Recovery procedure and reprint the image with the same settings as before.
3. Perform the Media Advance adjustment on the media that is currently being used ⇒ Refer to the User's Guide.
4. Check the temperature of the Heaters to make sure that they are not set too high. If necessary, lower the temperature of the Heaters and reprint the image.

Images are Blurred

Description of problem

This problem is often caused by incorrect adjustment of the Bi-directional print position causing the image or text to look blurred.

Corrective Action

1. Use the Printer in an environment that is less humid.
2. Make sure that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.
3. Check the temperature of the Heaters to make sure that they are not set too high. If necessary, lower the temperature of the Heaters and reprint the image.
4. Perform the Bi-Directional Print Position Correction.

Bleeding, Repelling or Mottling Problems

Description of problem

The problems can be described as follows:

- Ink Bleeding can spoil the sharpness of the image and cause the text to be blurred.
- Ink Repelling can cause the lines to be dotty or uneven.
- Ink Mottling can cause dark lines in high density prints.

Corrective Action

1. Try printing using a higher quality print mode.
2. Check the temperature of the Heaters to make sure that they are not set too high. If necessary, lower the temperature of the Heaters and reprint the image.

Image is Completely Blank or Faded

Corrective Action

1. There might be a problem between the Printer and Computer. Check the cable between the computer and the Printer to make sure it is not damaged and is connected correctly.
2. Check the date file that was sent to print.
3. Make sure that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.
4. Check that the room temperature is higher than 15°C and make sure that you leave the Printer to warm up sufficiently.

Output Only Contains a Partial Print

Corrective Action

1. There might be a problem between the Printer and Computer. Check the cable between the computer and the Printer to make sure it is not damaged and is connected correctly.
2. There might be foreign objects attached to the Printhead. Perform the Printhead Recovery procedure and reprint the image.
3. If cleaning the Printheads does NOT solve the problem, then the nozzles might be blocked. Perform the Wash Printheads procedure (refer to the User's Guide) and reprint image.

The Printer Area is Stained

Corrective Action

1. Check if the Carriage Shields are covered in ink. If the Carriage Shields are covered in ink, then try to clean them with a cloth.
2. Check if the Carriage Shields are correctly positioned because they could be installed too low. If necessary, adjust the Carriage Shields ⇒ Page *5-22*.
3. Check if the leading edge of the media is curled. If it is curled, cut off the leading edge before printing.
4. Check if the media is wrinkled. If it is wrinkled, advance the media and cut off the part of the media that is wrinkled.
5. Make sure that the **media type** selected in the Front Panel is the same as the media type loaded into the Printer.
6. Make sure that the Center Platen is not stained with ink since this could be transferred to the printed image.

Part of Image is Missing at the Start of the Print

Corrective Action

1. There might be a problem between the Printer and Computer. Check the cable between the computer and the Printer to make sure it is not damaged and is connected correctly.
2. Make sure that the environmental conditions (temperature, humidity) are within the temperature/humidity range as specified for the Printer (refer to the User's Guide for further information).

Print Quality is not Improved After Printhead Recovery

Corrective Action

1. Perform the Daily Maintenance procedure (⇒ Page *9-3*).
2. Repeat the Printhead Recovery procedure (⇒ Page *9-10*) and reprint the image.
3. Print the Nozzle Check pattern and check if there any nozzles missing. If there are several nozzles missing and the Printhead Recovery procedure has not improved the print quality, then it might be necessary to replace the failing Printhead.

Parts and Diagrams 7

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Right Hand Covers

Right Hand Covers			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60011	2	Top Side Cover
2	Q6665-60007	2	Upper Side Cover
3	Q6665-60008	2	Lower Side Cover
4	Q6665-60005	1	Capping Door
5	Q6665-60006	1	Lower Capping Cover
6	Q6665-60009	1	Right Subtank Cover
7	Q6665-60014	1	Right Ink Cartridge Door
8	Q6665-60016	4	Side Ink Cartridge Cover
9	Q6665-60013	1	Right Rear Ink Cartridge Cover

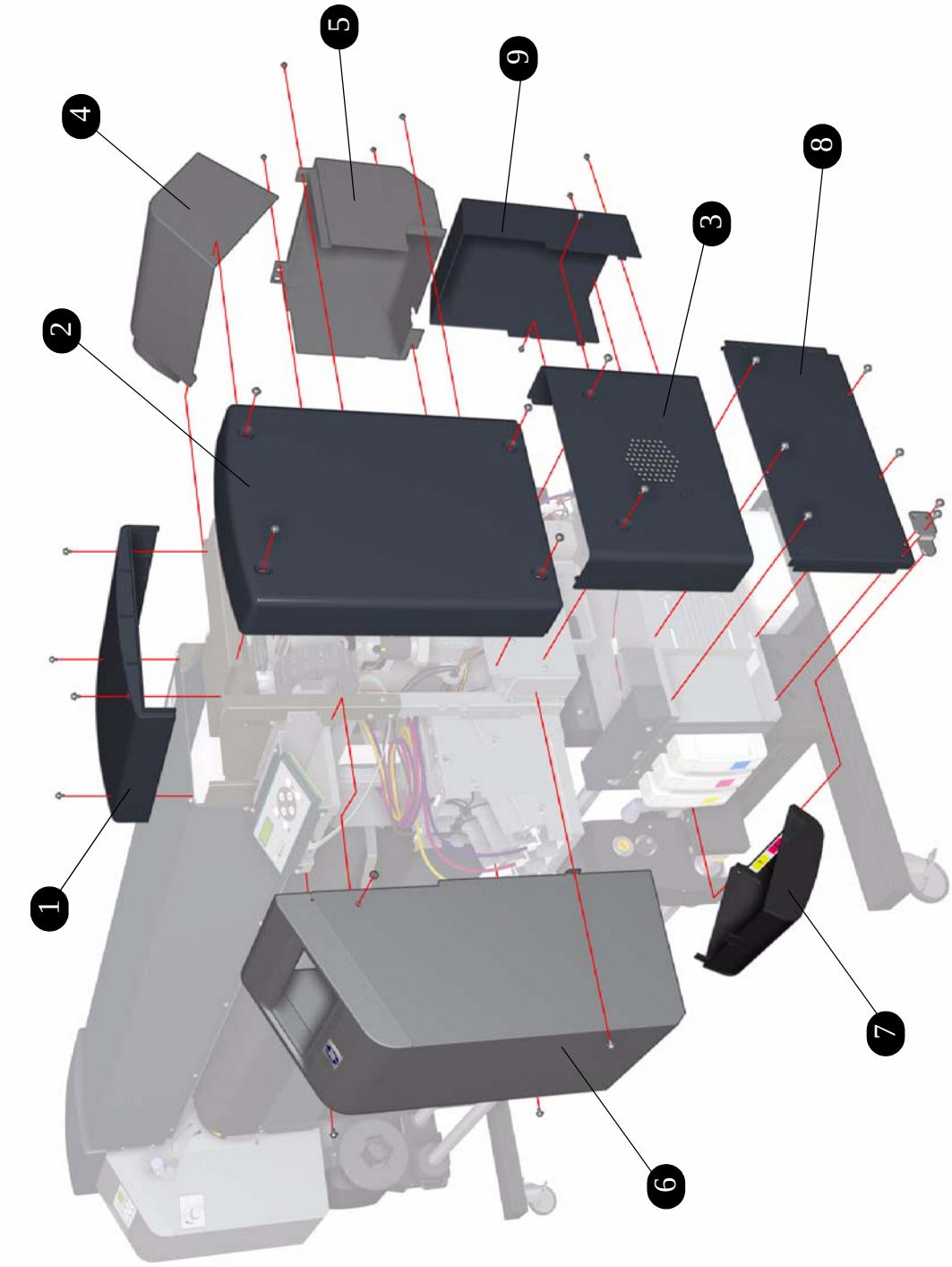

Figure 1: Right Hand Covers

Left Hand Covers

Left Hand Covers			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60011	2	Top Side Cover
2	Q6665-60007	2	Upper Side Cover
3	Q6665-60008	2	Lower Side Cover
4	Q6665-60002	1	Wiping Door
5	Q6665-60003	1	Lower Wiping Cover
6	Q6665-60010	1	Left Subtank Cover
7	Q6665-60015	1	Left Ink Cartridge Door
8	Q6665-60016	4	Side Ink Cartridge Cover
9	Q6665-60081	1	Left Rear Ink Cartridge Cover

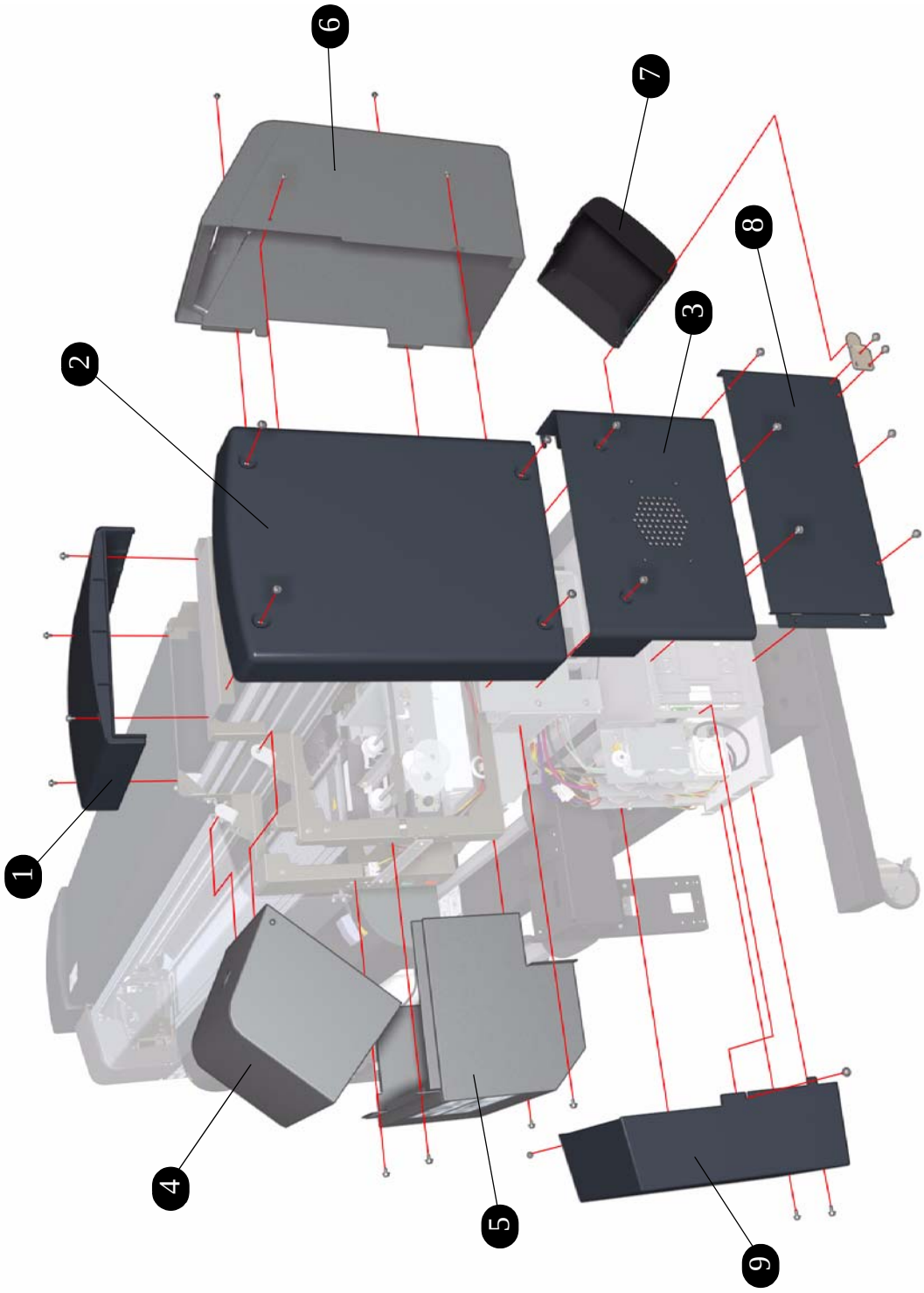

Figure 2: Left Hand Covers

Center Covers

Center Covers			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60012	1	Rear Cover
2	Q6665-60004	1	Top Cover
3	Q6665-60022	1	Electronics Module Cover
4	Q6665-60021	1	Firmware Access Cover

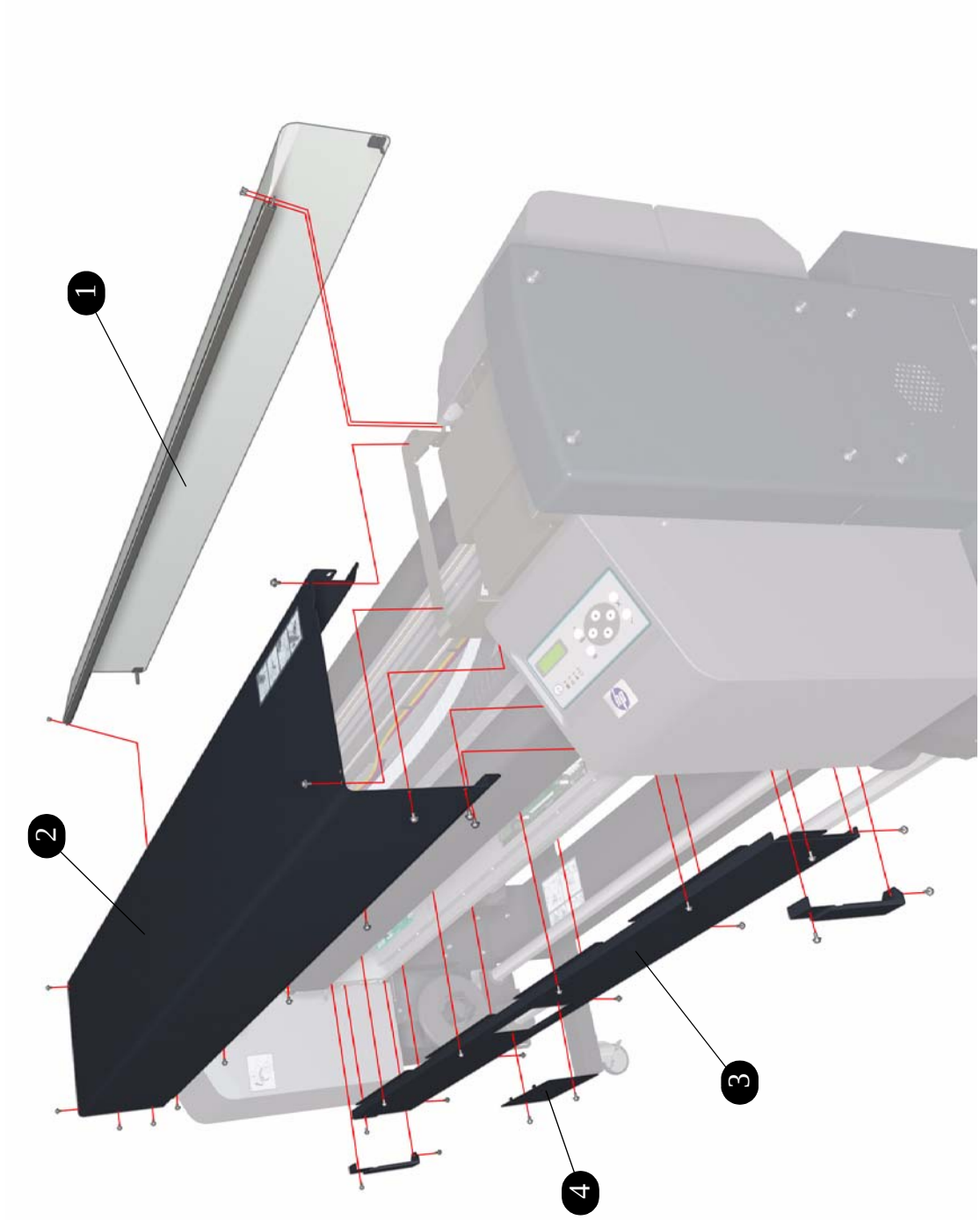

Figure 3: Center Covers

Electronics Module

Electronics Module			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60023	1	Power Supply Unit
2	Q6665-60017	1	NVRAM
3	Q6665-60018	1	Main PCA
4	Q6665-60019	1	Head Relay Board
5	Q6665-60020	1	Heater Relay Assembly

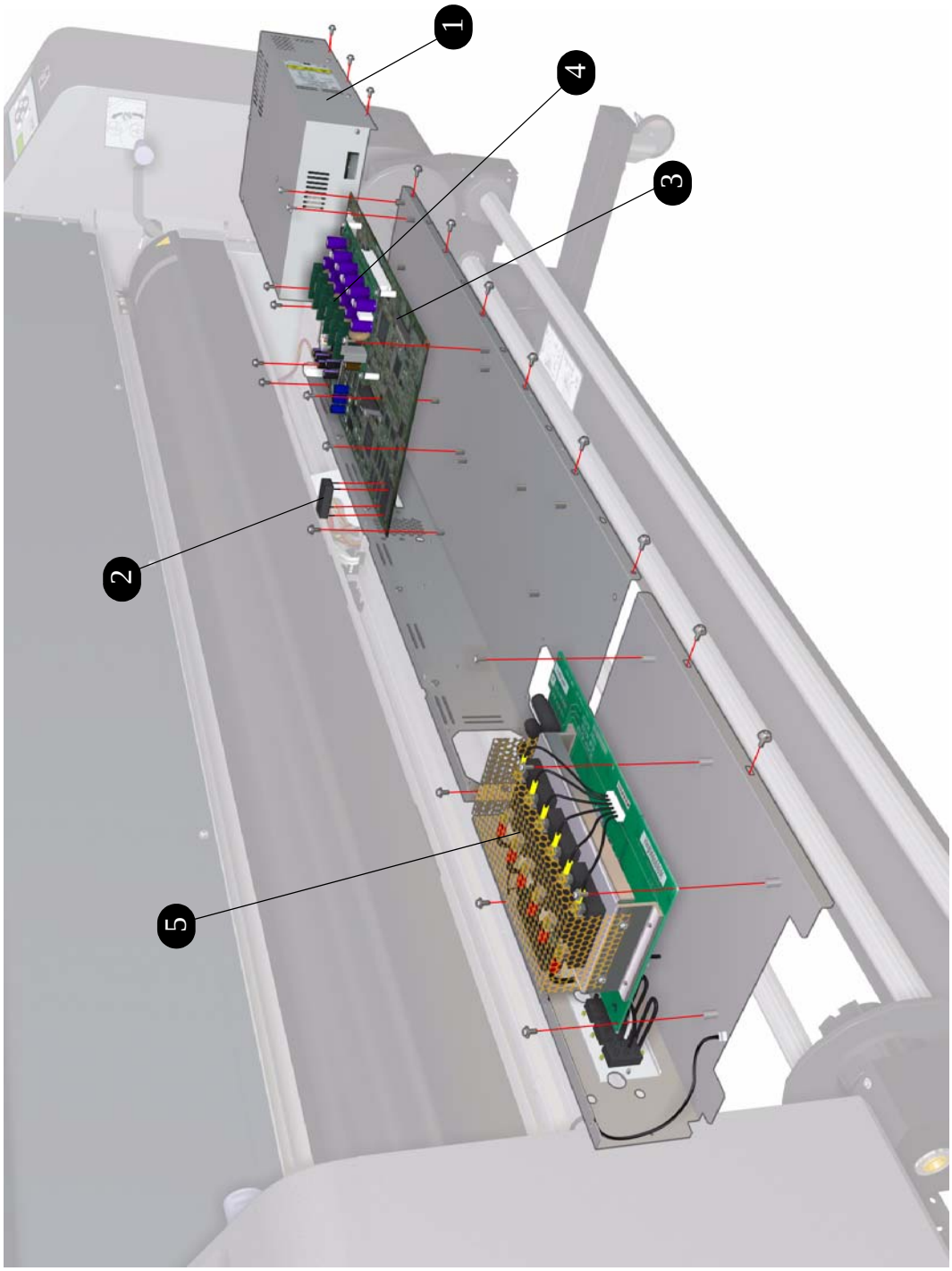

Figure 4: Electronics Module

Control Panels

Control Panels			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60027	1	Front Panel
2	Q6665-60025	1	Heater Panel

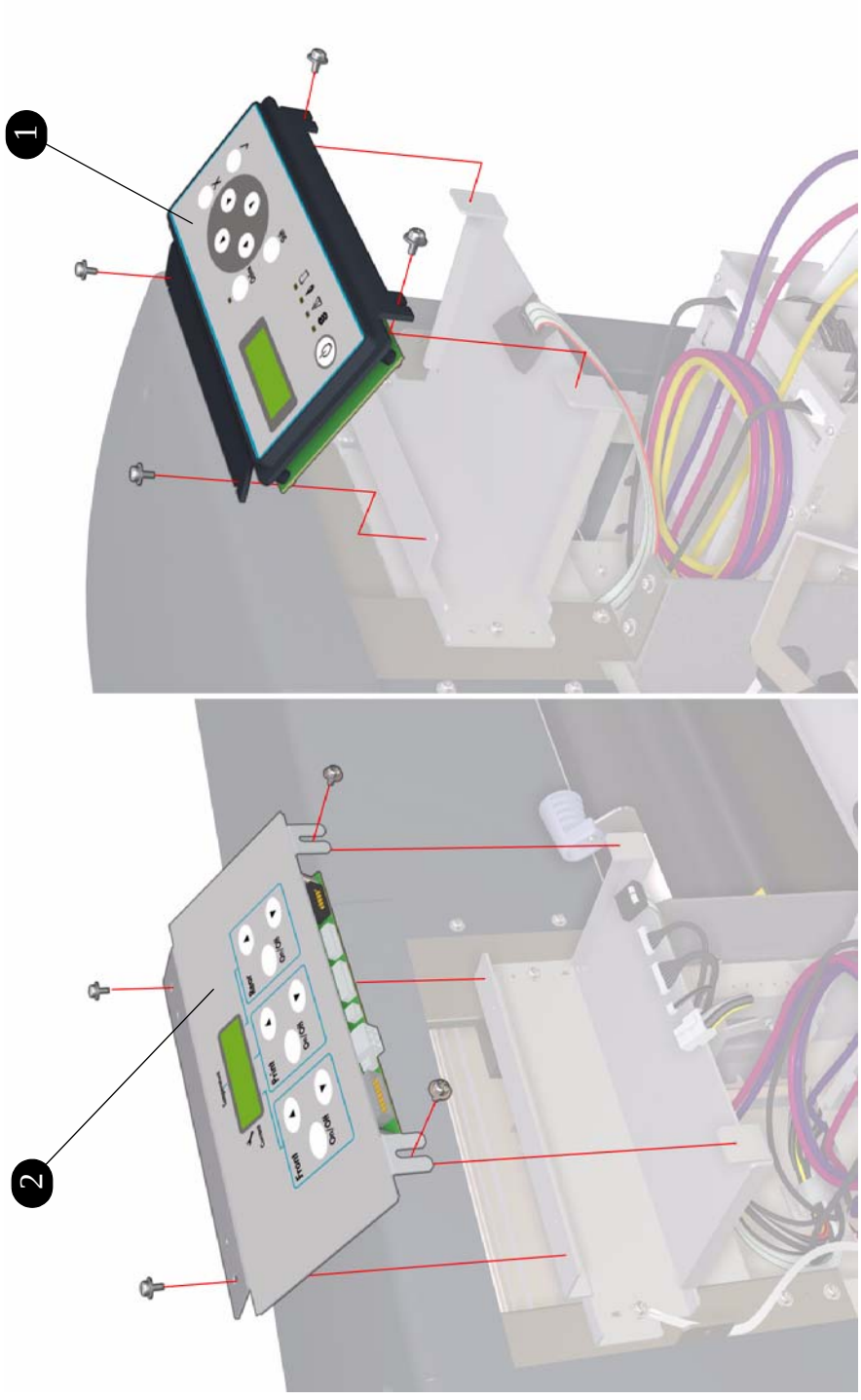

Figure 5: Control Panels

Carriage Assembly

Carriage Assembly			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60052	2	Printhead Cooling Fan
2	Q6665-60048	1	Carriage PCA
3	Q6665-60001	6	Printhead
4	Q6665-60047	1	Printhead Connector Assembly
5	Q6665-600049	1	Encoder Sensor
6	Q6665-60050	1	Line Sensor
7	Q6665-60051	1	Air Dumper
8	Q6665-60041	1	Encoder Strip
9	Q6665-60026	1	Carriage Home Position Sensor

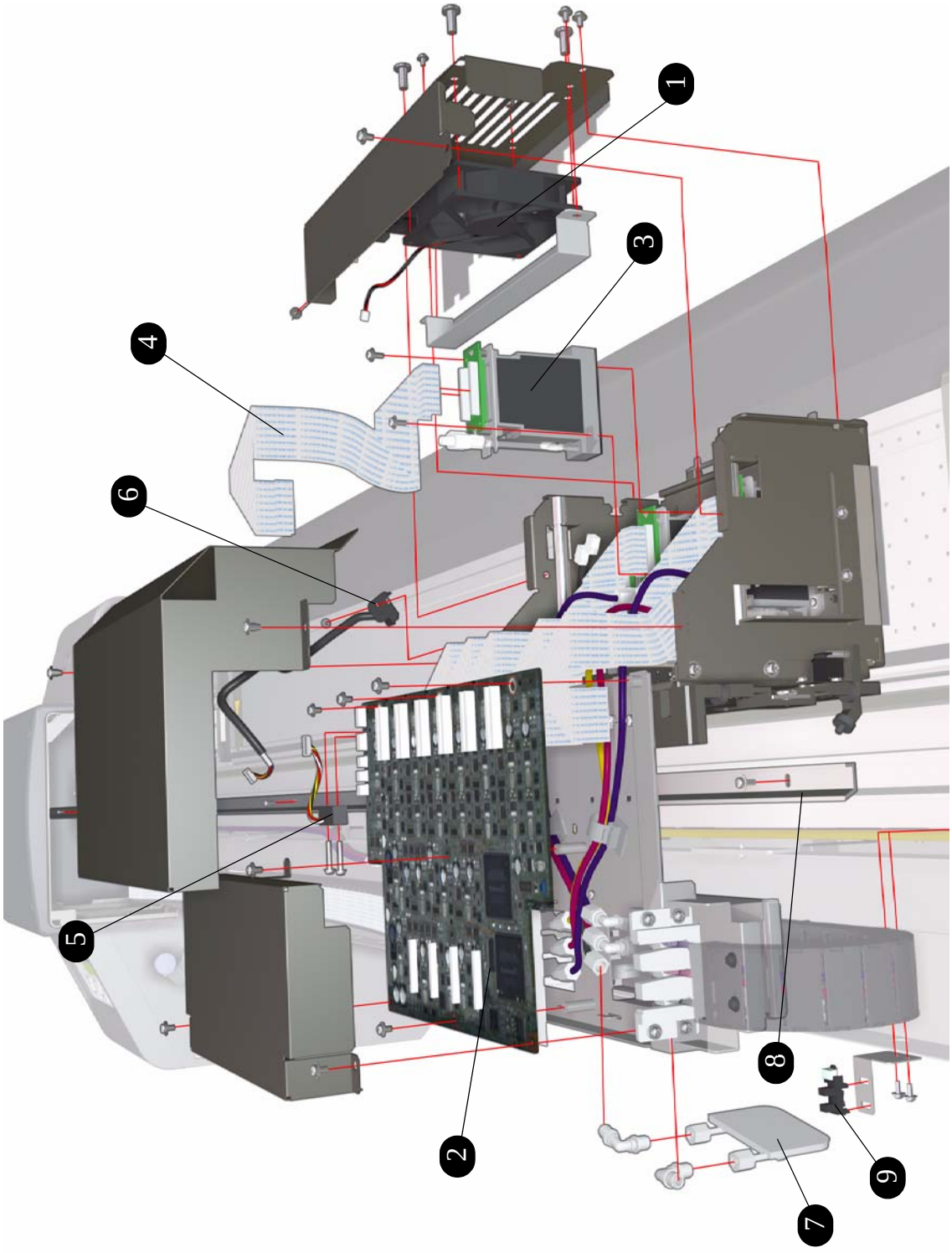

Figure 6: Carriage Assembly

Scan-Axis Assemblies

Scan-Axis Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60046	1	Trailing Cable Assembly
2	Q6665-60042	1	Belt
3	Q6665-60045	1	Tension Pulley
4	Q6665-60043	1	Drive Pulley
5	Q6665-60044	1	Scan-Axis Motor Assembly

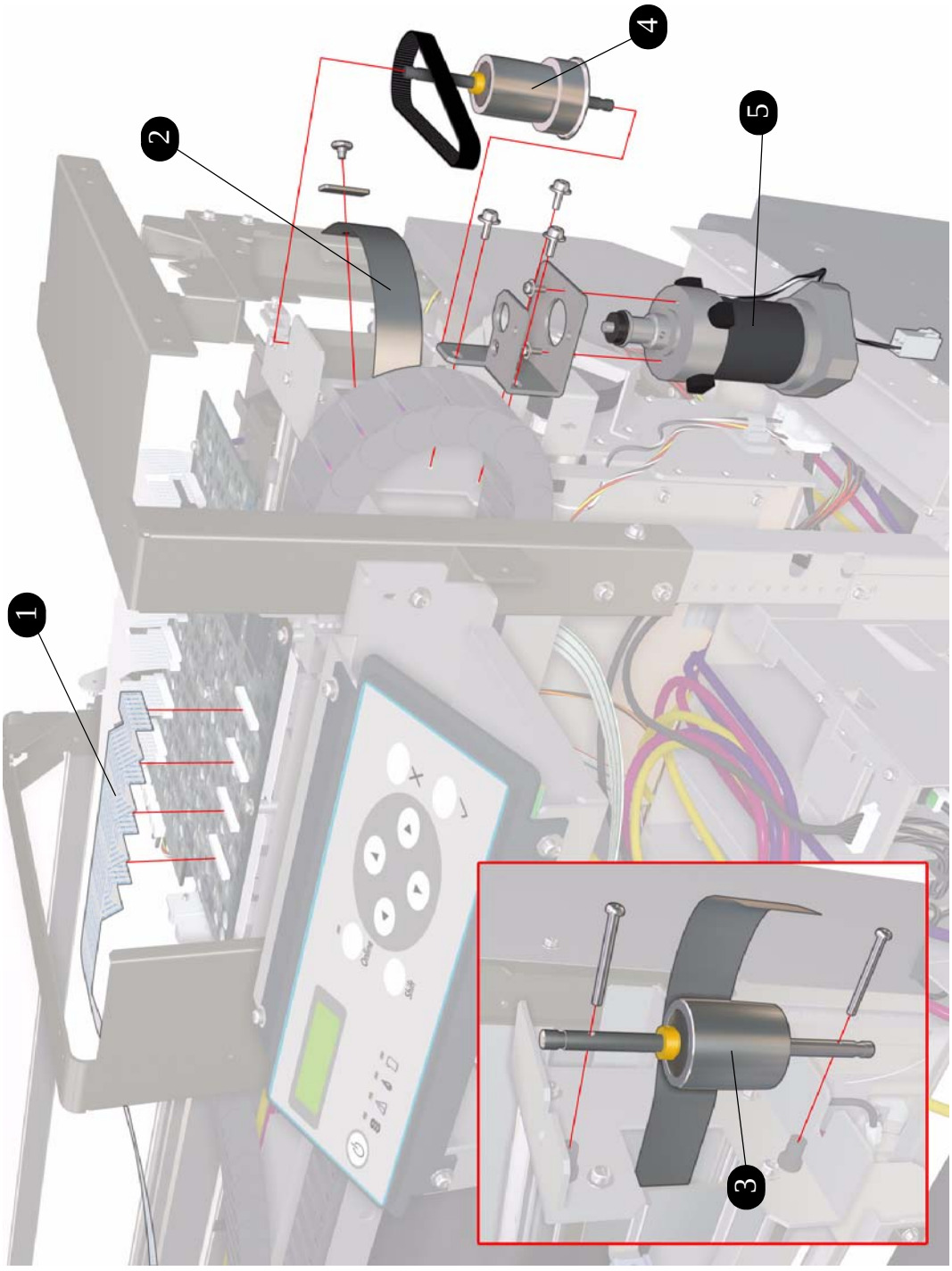

Figure 7: Scan-Axis Assemblies

Paper Path Assemblies

Paper Path Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60031	1	Front Heater
2	Q6665-60029	1	Center Platen
3	Q6665-60032	1	Rear Heater
4	Q6665-60030	3	Vacuum Fan
5	Q6665-60035	1	Paper-Axis Motor
6	Q6665-60028	2	Media Edge Guard
7	Q6665-60036	1	Pinchwheel Assembly
8	Q6665-60033	2	Media Sensor (Front and Rear)
9	Q6665-60026	1	Media Lever Sensor

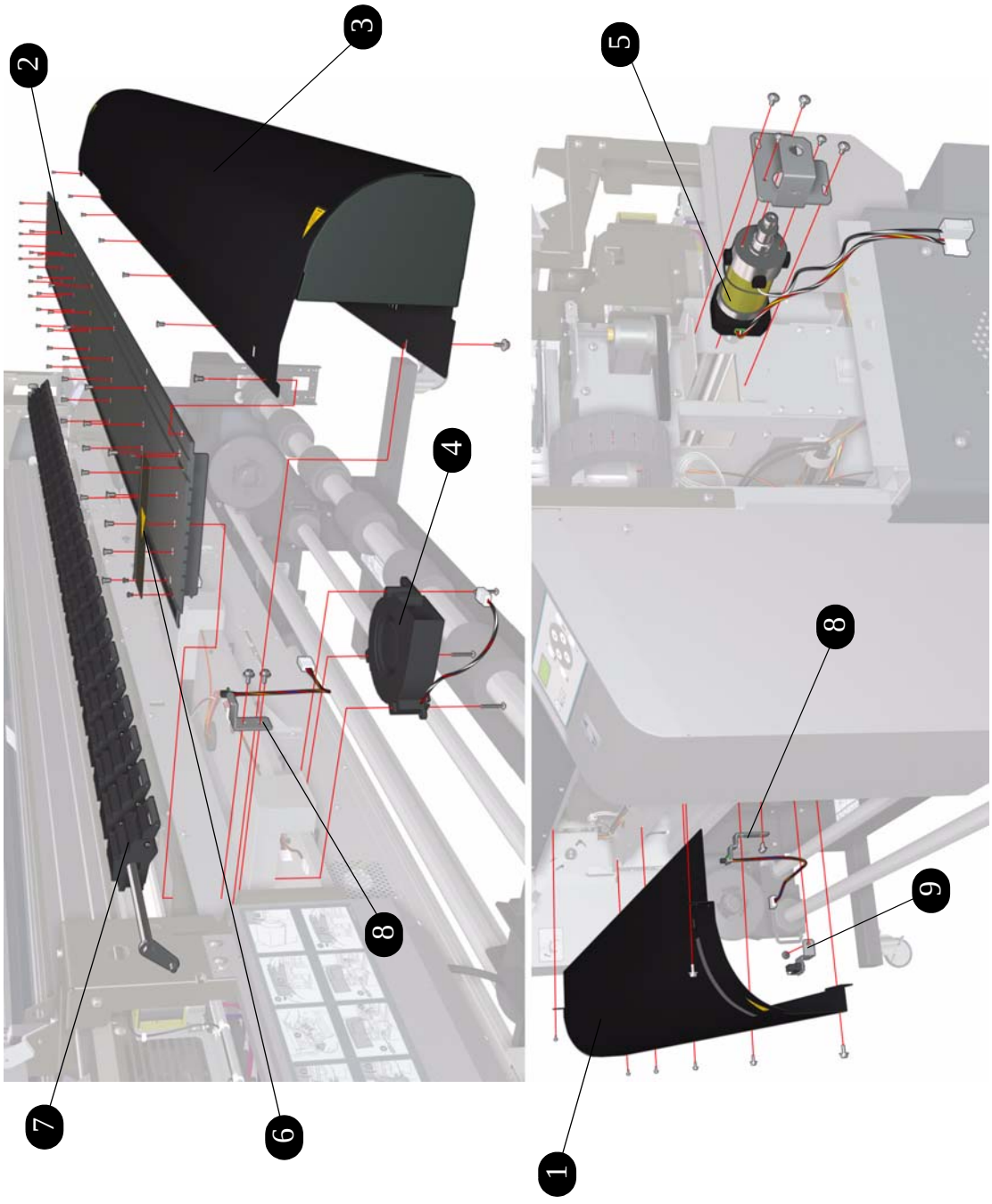

Figure 8: Paper Path Assemblies

Media Entry Assemblies

Media Entry Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60077	1	Right Media Feed
2	Q6665-60078	1	Left Media Feed
3	Q6665-60079	2	Media Flange
4	Q6665-60037	1	End-of-Media Sensor
5	Q6665-60034	3	Lever Knob

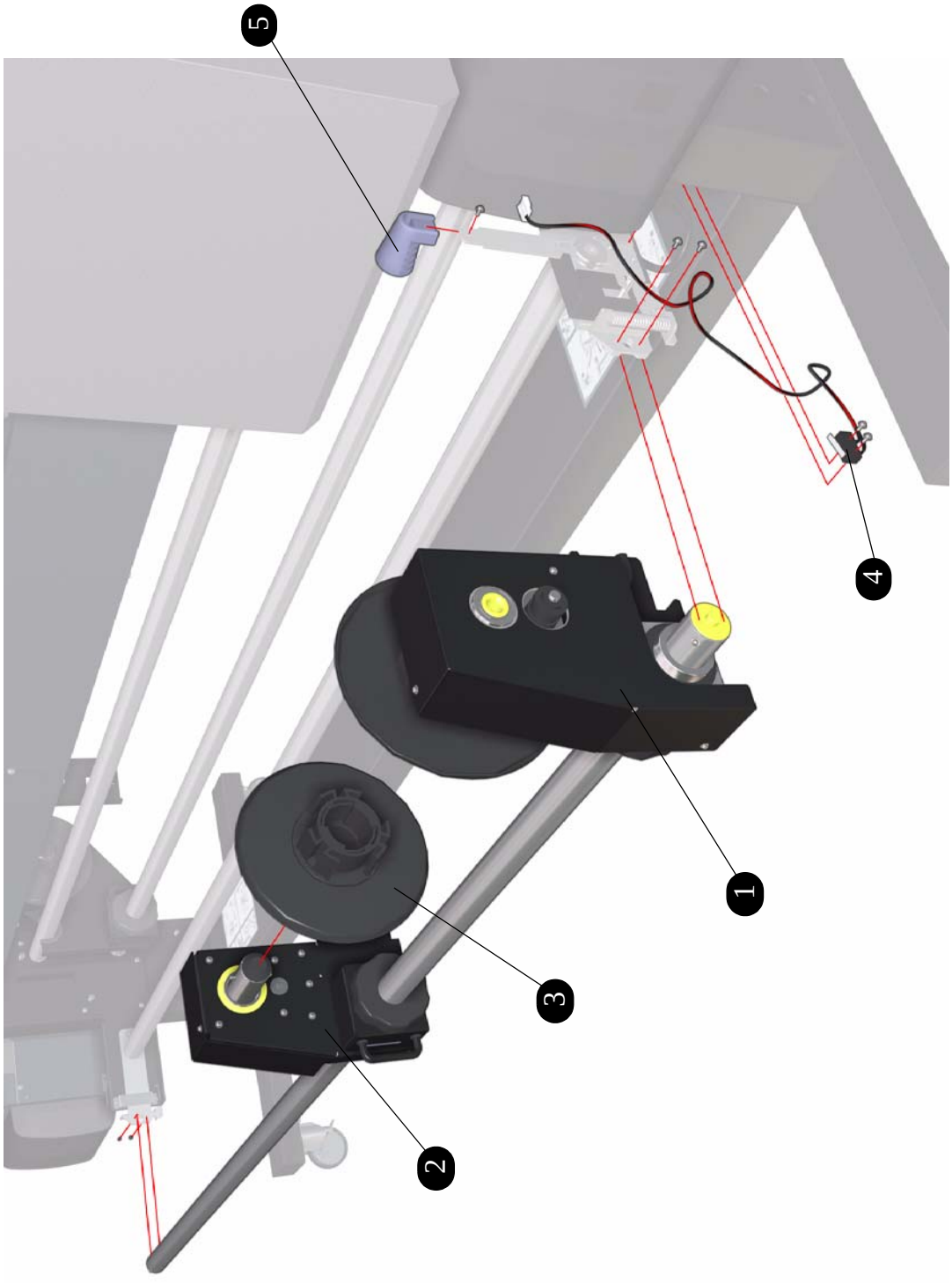

Figure 9: Media Entry Assemblies

Take-Up-Reel Assemblies

Take-Up-Reel Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60038	1	Take-Up-Reel Tension Roller
2	Q6665-60040	1	Take-Up-Reel Motor
3	Q6665-60039	1	Take-Up-Reel Sensor

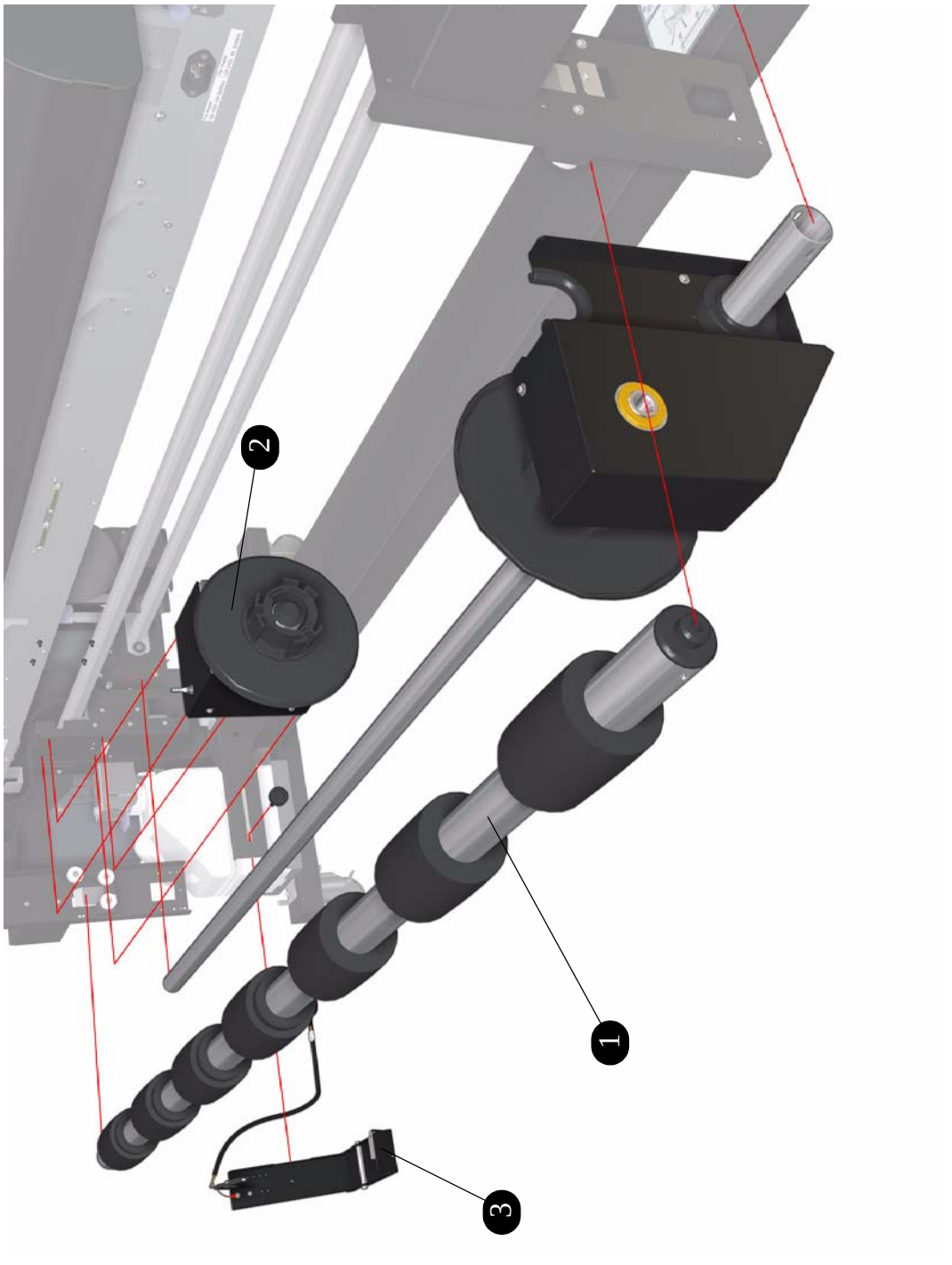

Figure 10: Take-Up-Reel Assemblies

Capping Assemblies

Capping Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60060	1	Capping Station Assembly
2	Q6665-60061	6	Capping Unit
3	Q6665-60062	2	Solenoid Assembly
4	Q6665-60063	6	Prime Assembly
5	Q6665-60024	2	Rear Cover Sensor

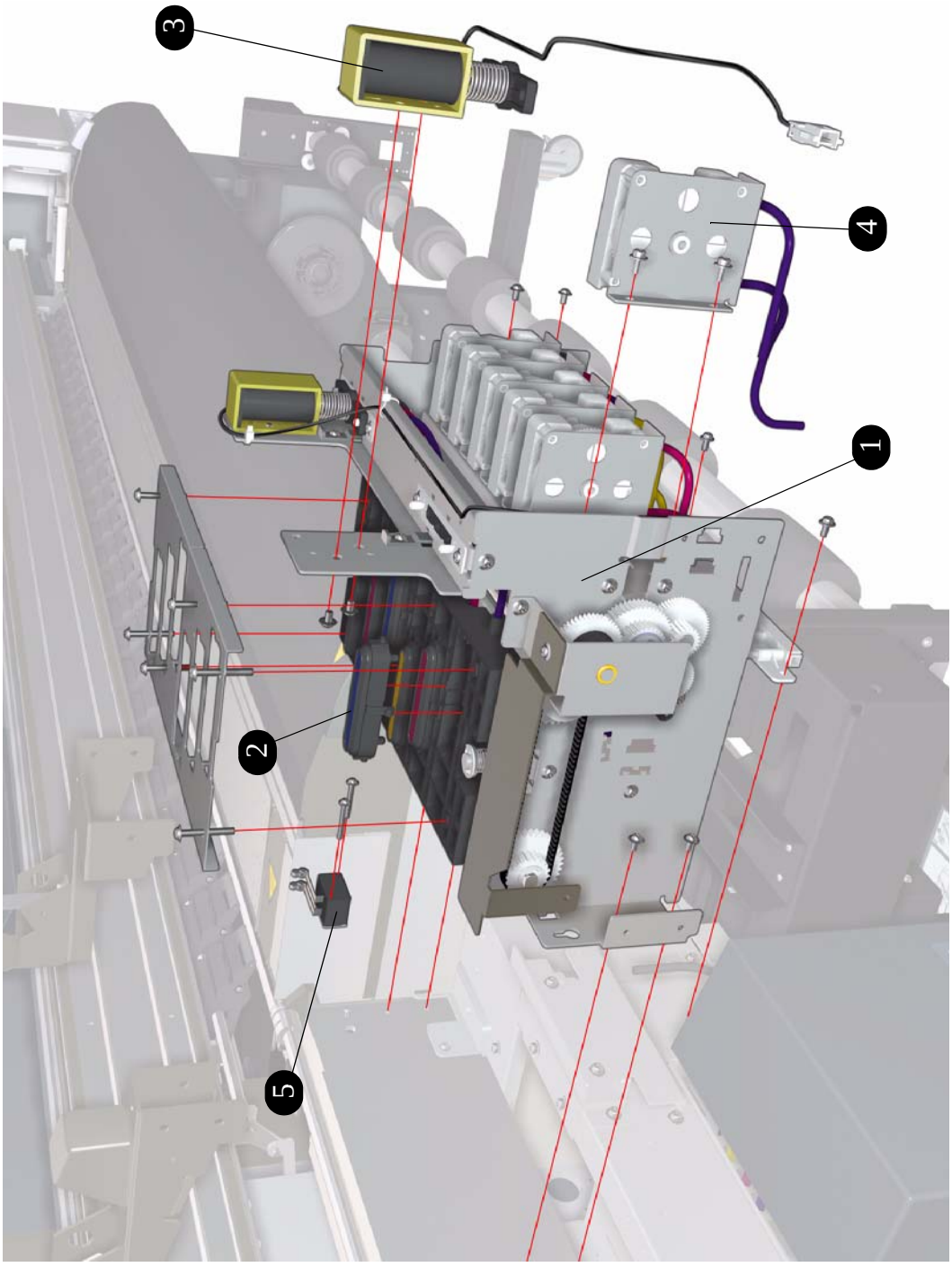

Figure 11: Capping Assemblies

Wiping Assemblies

Wiping Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60064	1	Wiping Station Assembly
2	Q6665-60066	1	Wiper Blade
3	Q6665-60067	2	Wiper Belt
4	Q6665-60065	1	Wiper Cleaning Assembly
5	Q6665-60024	2	Rear Cover Sensor

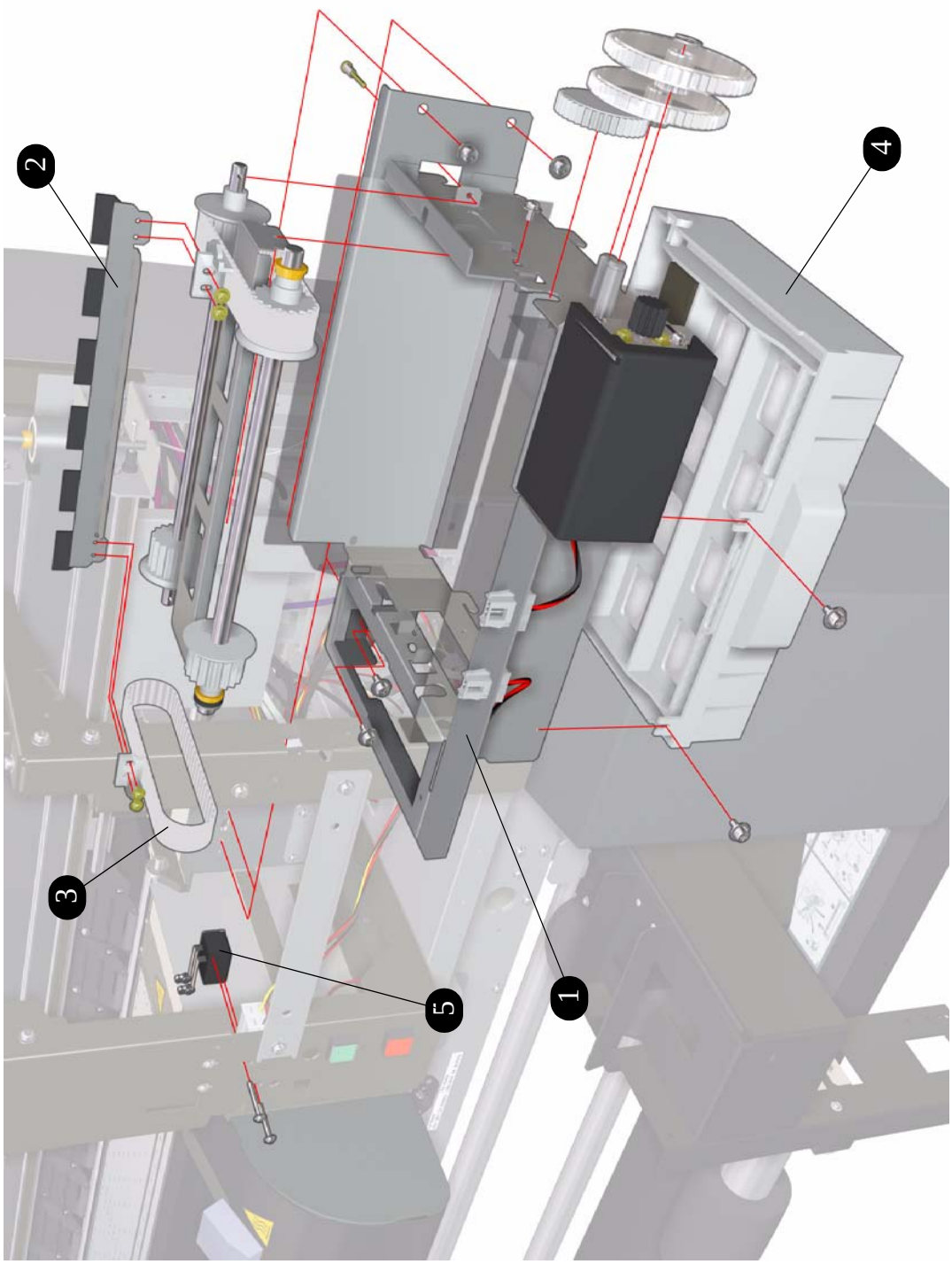

Figure 12: Wiping Assemblies

Ink Supply and Subtank Assemblies

Ink Supply and Subtank Assemblies			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60055	1	Right Ink Supply Station
-	Q6665-60056	1	Left Ink Supply Station
2	Q6665-60053	6	Ink Pump Assembly (includes Ink Pump Tube)
3	Q6665-60054	6	Ink Pump Tube
4	Q6665-60057	2	Ink Cartridge Door Sensor
5	Q6665-60059	6	Subtank Assembly
6	Q6665-60058	6	Subtank Sensors

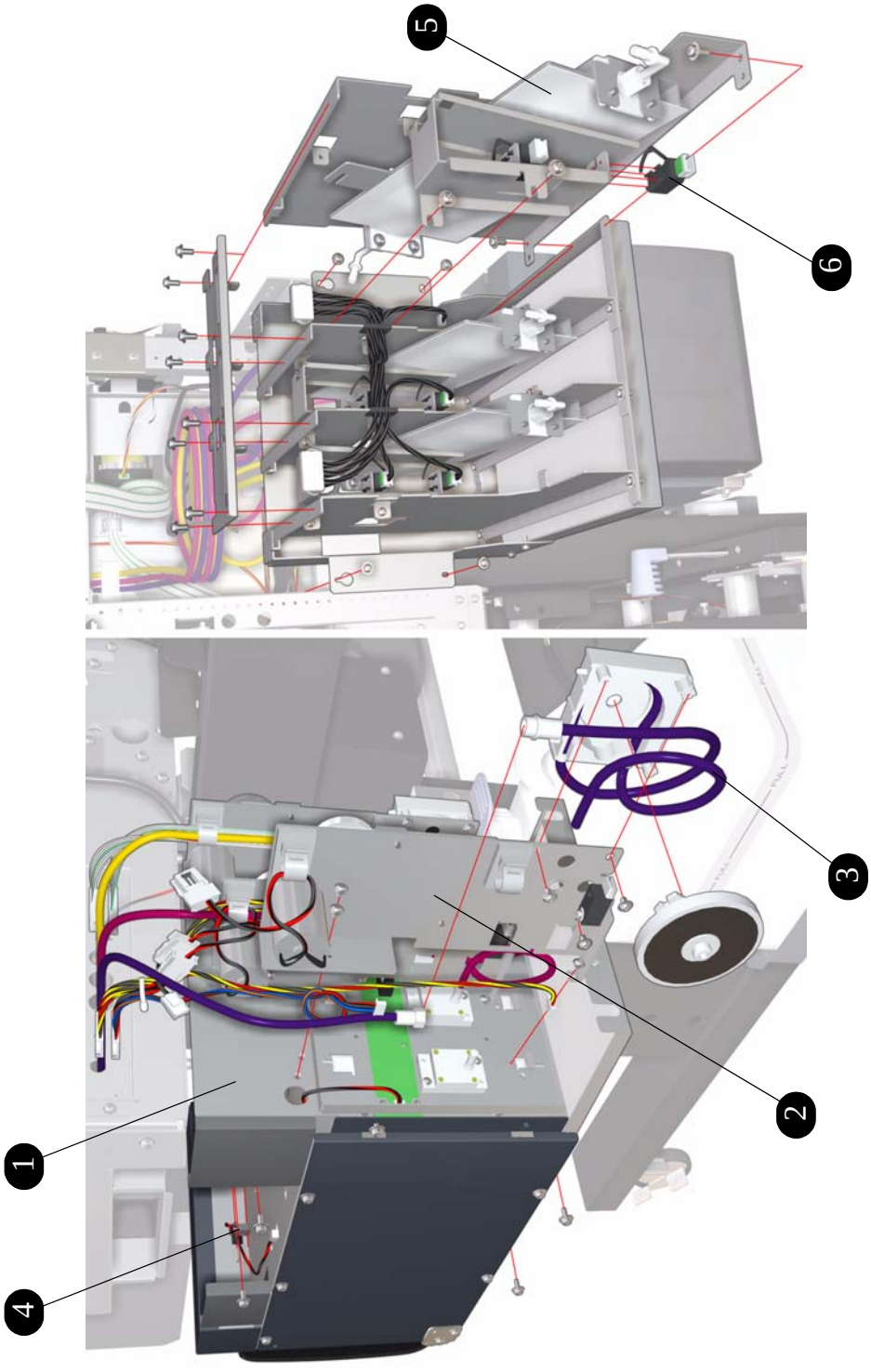

Figure 13: Ink Supply and Subtank Assemblies

Printer Stand and Waste Bottle

Printer Stand and Waste Bottle			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	Q6665-60069	1	Foot Casters
2	Q6665-60068	1	Waste Bottle
3	Q6665-60057	1	Waste Bottle Sensor
4	Q6665-60080	1	Waste Bottle Lock

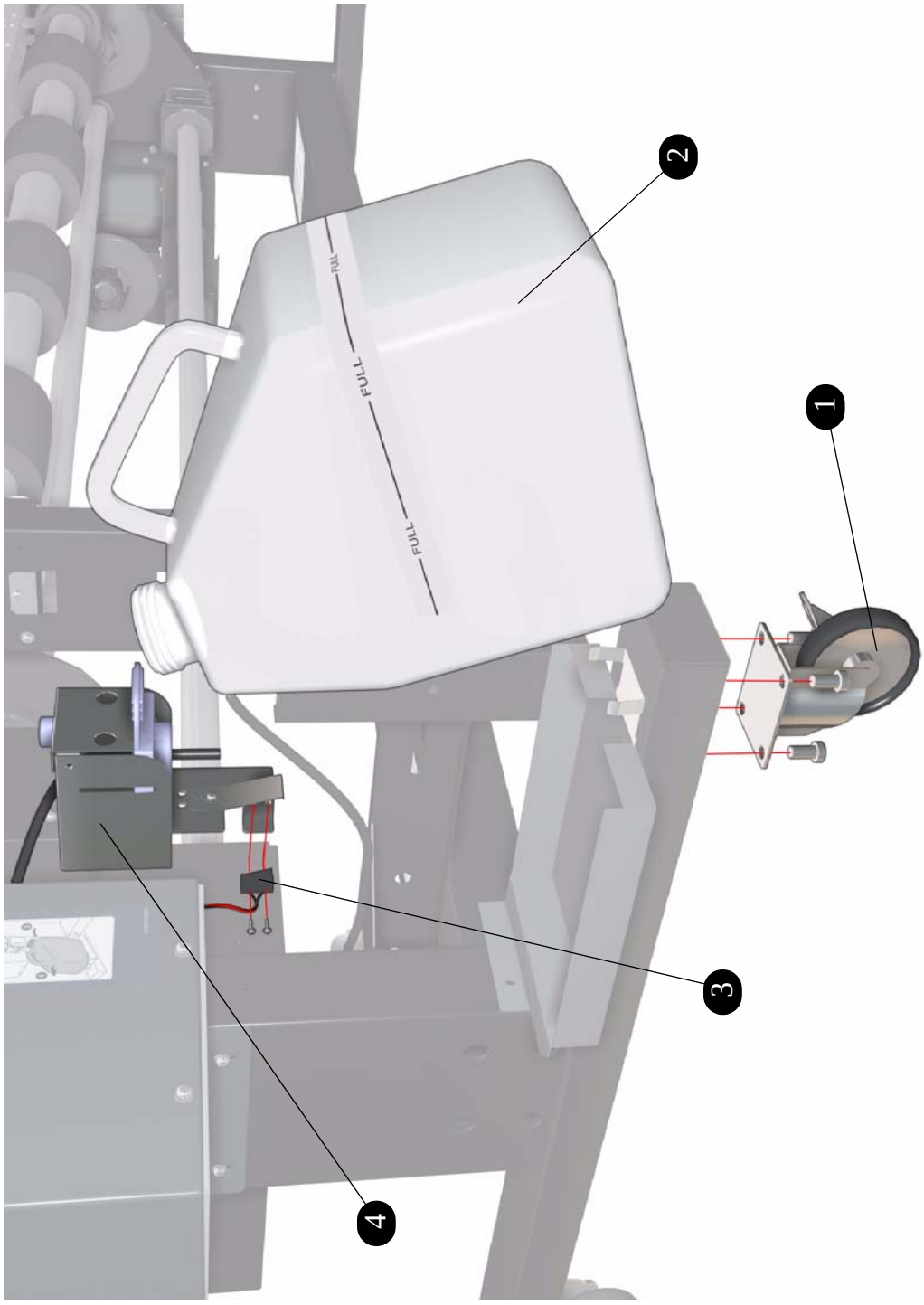

Figure 14: Printer Stand and Waste Bottle

Service Tools

Service Tools			
Reference on Drawing	**HP Part Number**	**Quantity**	**Description/Comments**
1	-	1	Carriage Height Adjustment Tools
2	-	1	Head Position Adjustment Tools
3	-	1	Capping Height Adjustment Tools

If any of the above tools are required, please contact the HP Response Center or the nearest HP Support Office.

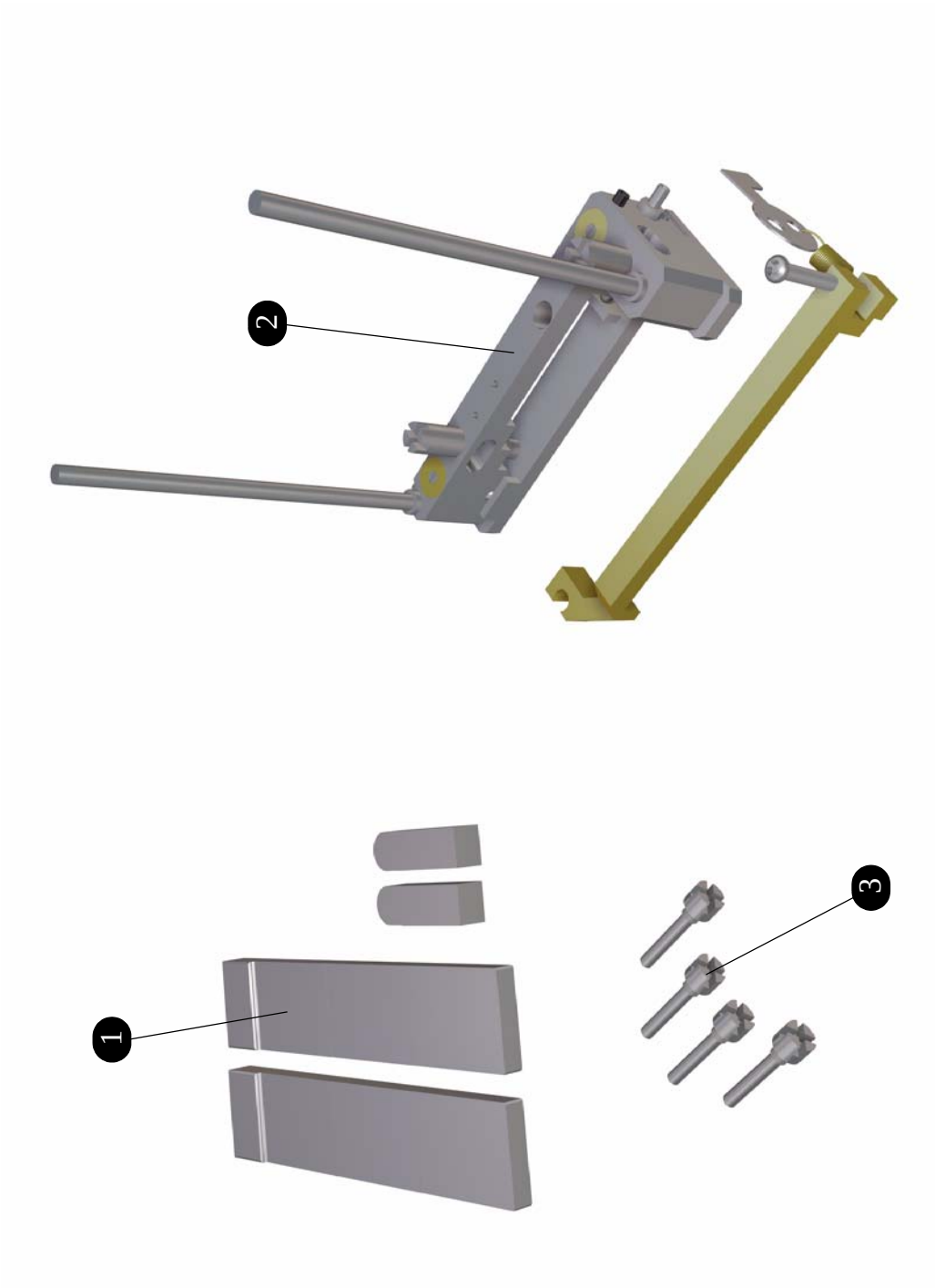

Figure 15: Service Tools

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Introduction

This chapter is a step by step guide to the removal and installation of the key components in the printer. You may find it useful to tick off the steps as they are performed. Use the illustration at each procedure to identify the parts referred to in the text.

The procedures appear in order of removal. So the whole machine can be stripped down by starting at the beginning of this chapter and working through the subsequent procedures.

Before using this chapter to remove and install a new component, always make sure that you have performed the relevant service test from Chapter 4. If the test passes you will not need to replace the component.

Safety Precautions

Review WARNING and CAUTION symbols and instructions before you service the printer. Follow these warnings and cautions for your protection and to avoid damaging the printer.

Serious shock hazard leading to death or injury may result if you do not take the following precautions:

Ensure that the ac power outlet (mains) has a protective earth (ground) terminal.

Switch the Printer Off, and disconnect it from the power source prior to performing any maintenance.

Prevent water or other liquids from running onto electrical components or circuits, or through openings in the module.

Electrostatic Discharge (ESD) Precautions

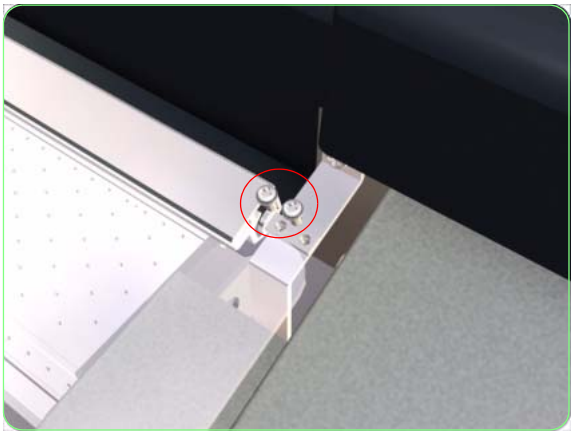
To prevent damage to the Printer circuits from high-voltage electrostatic discharge (ESD):

1. Do not wear clothing that is subject to static build-up.
2. Do not handle integrated circuits (ICs) in carpeted areas.
3. Do not remove an IC or a printed circuit assembly (PCA) from its conductive foam pad or conductive packaging until you are ready to install it.
4. Ground (earth) your body while disassembling and working on the Printer.
5. After removing a cover from the Printer, attach an earthing (ground) lead between the PCA common and earth ground. Touch all tools to earth ground to remove static charges before using them on the Printer.
6. After removing any PCA from the Printer, place it on a conductive foam pad or into its conductive packaging to prevent ESD damage to any ICs on the PCA.

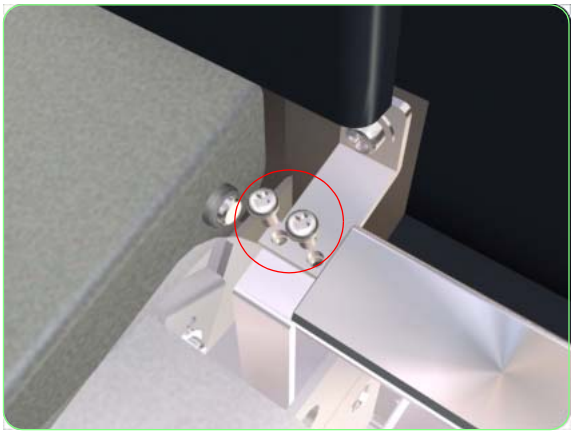
Rear Cover

Removal

Switch off the product and remove the power cable.



1. Remove two screws that secure the Rear Cover to the right hinge.



2. Remove two screws that secure the Rear Cover to the left hinge.

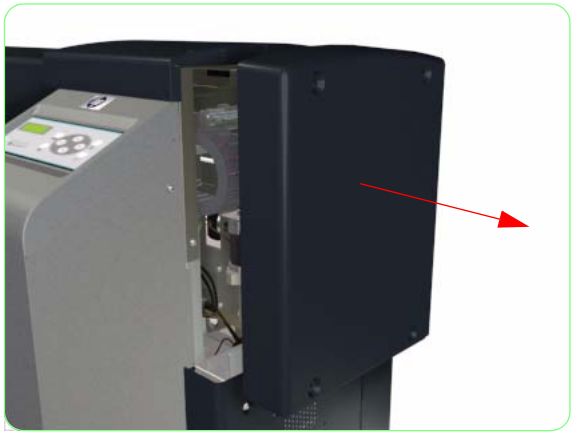
3. Remove the Rear Cover from the Printer.

Upper Side Cover (Left or Right)

Removal

Switch off the product and remove the power cable.

1. Remove four screws that secure the Upper Side Cover to the Printer.

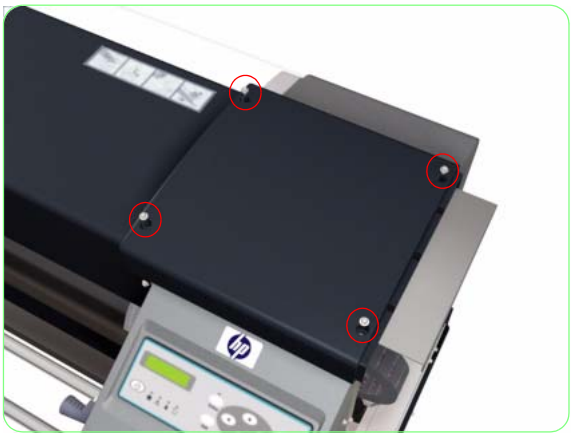


2. Remove the Upper Side Cover from the Printer.

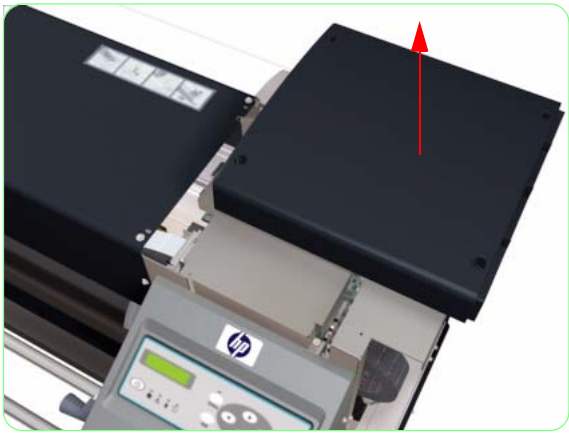
Top Side Cover (Left or Right)

Removal

Switch off the product and remove the power cable.



1. Remove the Upper Side Cover (Left or Right) ⇒ Page *8-4*.
2. Remove four screws that secure the Top Side Cover to the Printer.



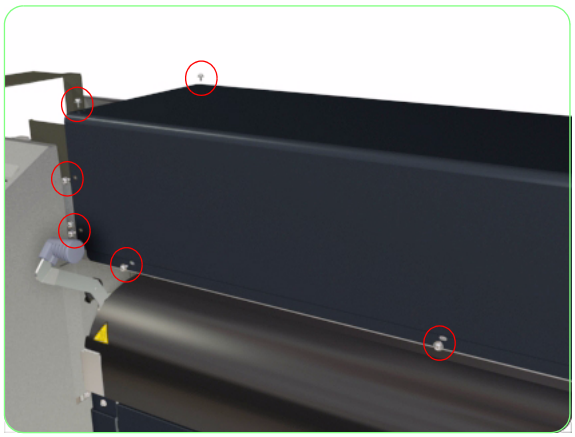
3. Remove the Top Side Cover from the Printer.

Top Cover

Removal

Switch off the product and remove the power cable.

1. Remove the Rear Cover ⇒ Page *8-3*.
2. Remove the Upper Side Cover (Left and Right) ⇒ Page *8-4*.
3. Remove the Top Side Cover (left and Right) ⇒ Page *8-5*.
4. Remove six screws that secure the Top Cover to the left hand side of the Printer.



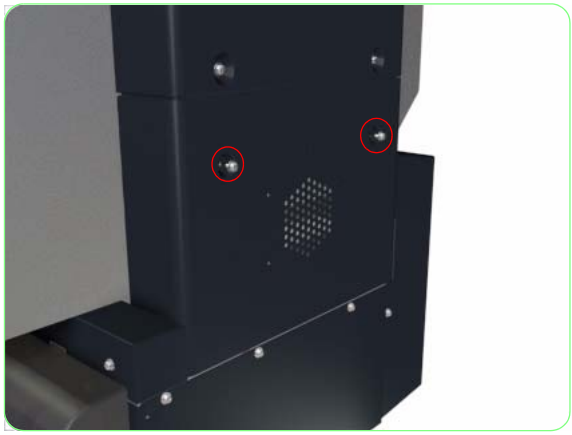
5. Remove seven screws that secure the Top Cover to the left hand side of the Printer.

6. Remove the Top Cover from the Printer.

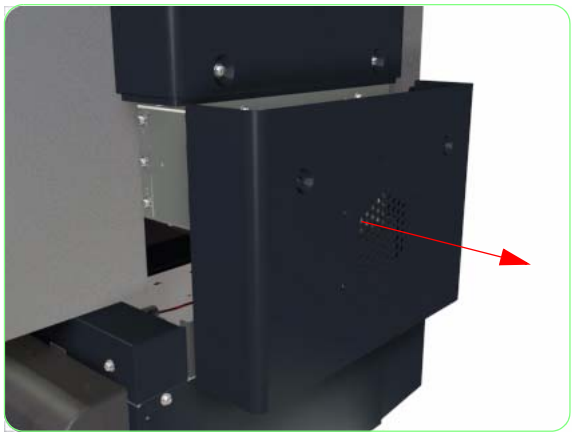
Lower Side Cover (Left or Right)

Removal

Switch off the product and remove the power cable.



1. Remove two screws that secure the Lower Side Cover to the Printer.



2. Remove the Lower Side Cover from the Printer.

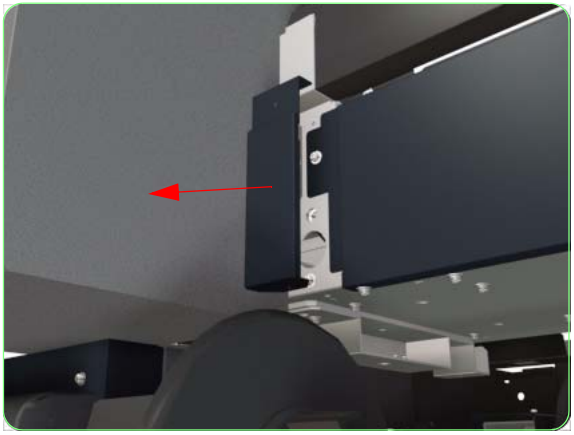
Left Subtank Cover

Removal

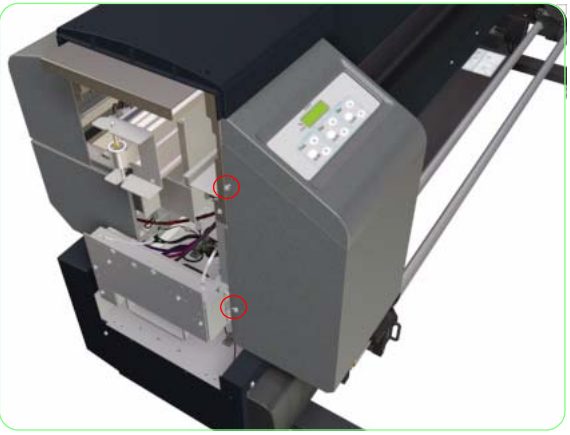
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Left) ⇒ Page *8-4*.
2. Remove the Lower Side Cover (Left) ⇒ Page *8-8*.
3. Remove two screws that secure the Left Electronics Module Side Trim to the Printer.

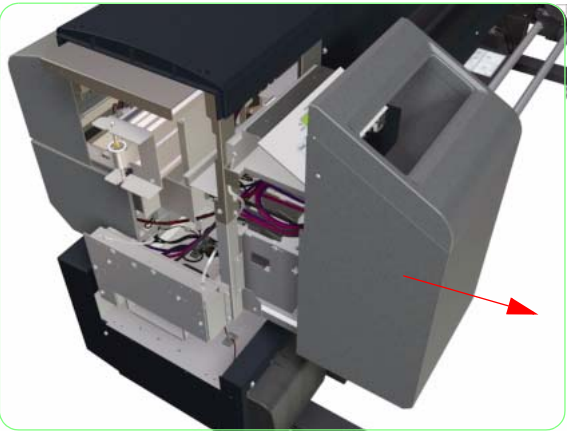
4. Remove the Left Electronics Module Side Trim from the Printer.



5. Remove two screws that secure the Left Subtank Cover to the Printer.



6. Remove two screws that secure the Left Subtank Cover to the Printer.



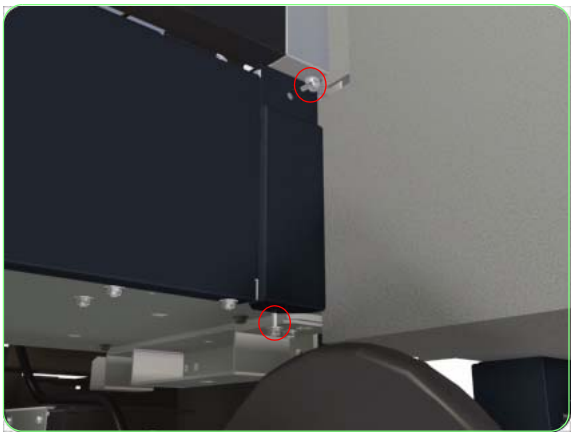
7. Remove the Left Subtank Cover from the Printer.

Right Subtank Cover

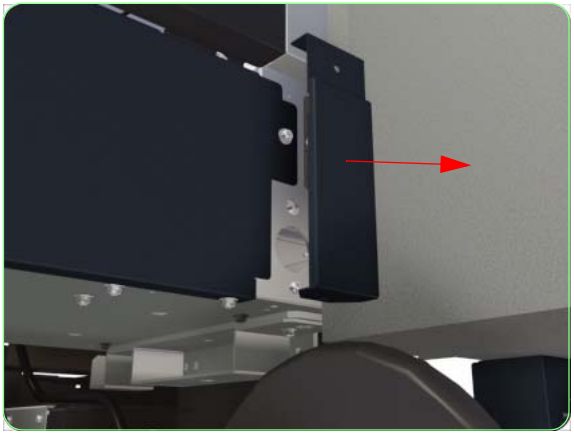
Removal

Switch off the product and remove the power cable.

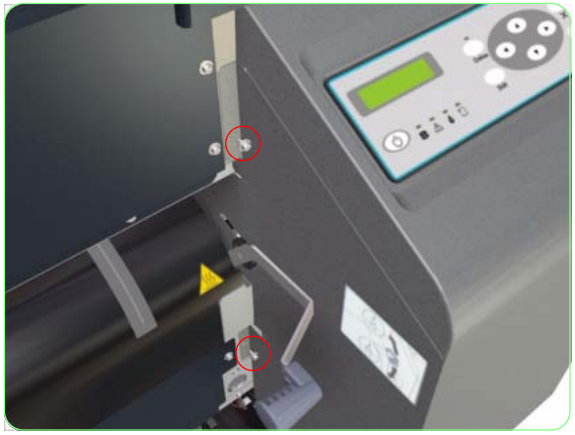
1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Lower Side Cover (Right) ⇒ Page *8-8*.



3. Remove two screws that secure the Right Electronics Module Side Trim to the Printer.

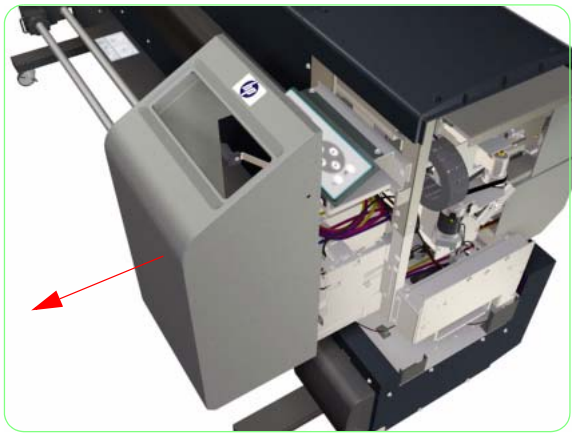


4. Remove the Right Electronics Module Side Trim from the Printer.



5. Remove two screws that secure the Right Subtank Cover to the Printer.

6. Remove two screws that secure the Right Subtank Cover to the Printer.



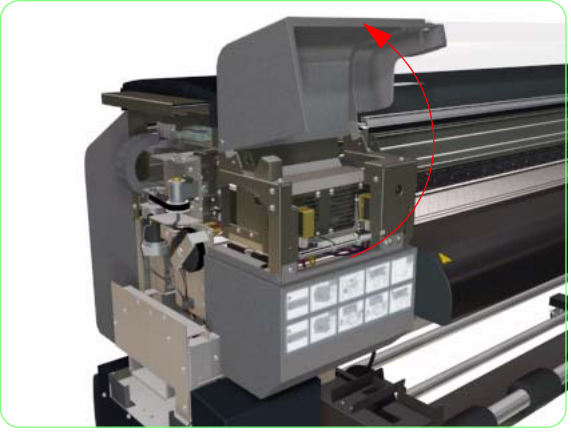
7. Remove the Right Subtank Cover from the Printer.

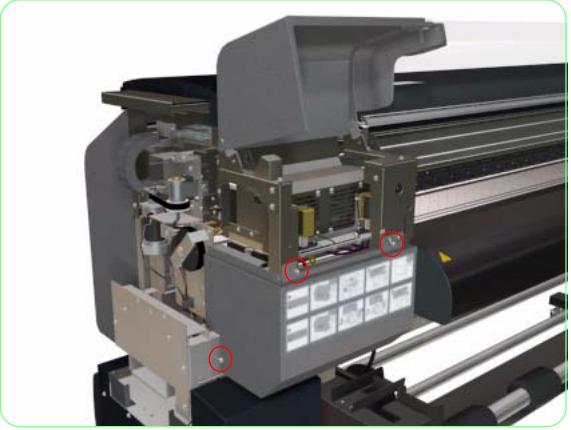
Lower Capping Cover

Removal

Switch off the product and remove the power cable.

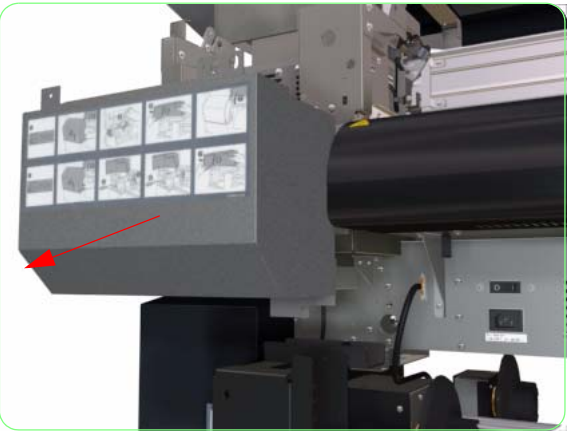
1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Lower Side Cover (Right) ⇒ Page *8-8*.
3. Open the Capping Door.





4. Remove three screws that secure the Lower Capping Cover to the Printer.

5. Remove one screw that secures the Lower Capping Cover to the Printer.



6. Remove the Lower Capping Cover from the Printer.

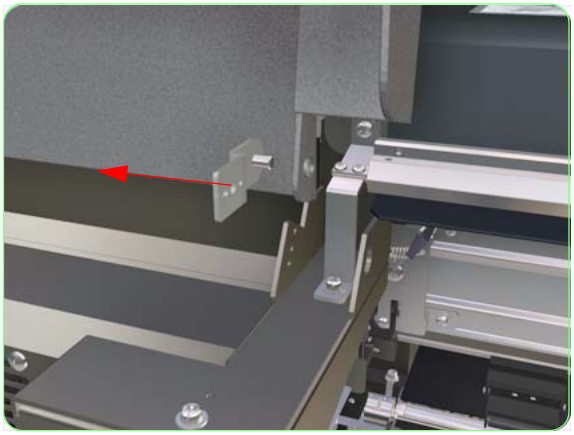
Capping Door

Removal

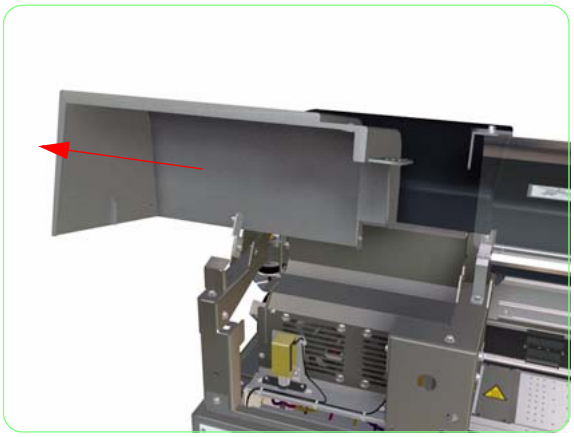
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Left or Right) ⇒ Page *8-4*.

2. Remove one screw that secures the Capping Door hinge to the Printer.



3. Remove the Hinge from the Printer.



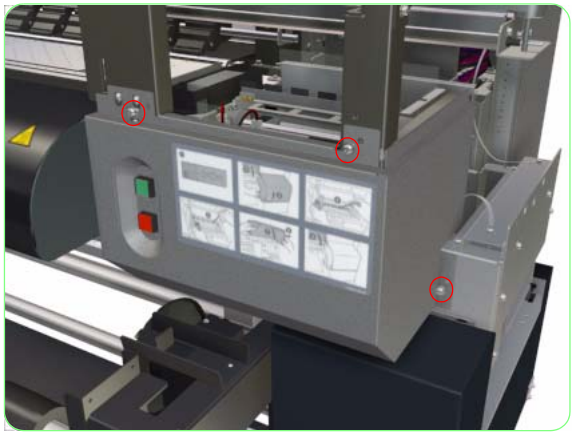
4. Slide the Capping Door to the left and remove from the Printer.

Lower Wiping Cover

Removal

Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Left) ⇒ Page *8-4*.
2. Remove the Lower Side Cover (Left) ⇒ Page *8-8*.
3. Open the Wiping Door.



4. Remove three screws that secure the Lower Wiping Cover to the Printer.

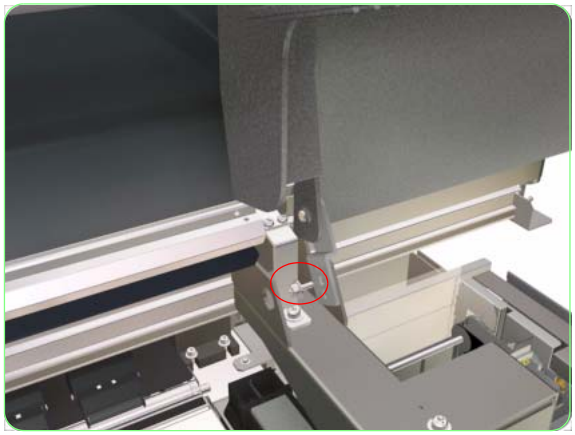
5. Remove one screw that secures the Lower Wiping Cover to the Printer.

6. Remove the Lower Wiping Cover from the Printer.

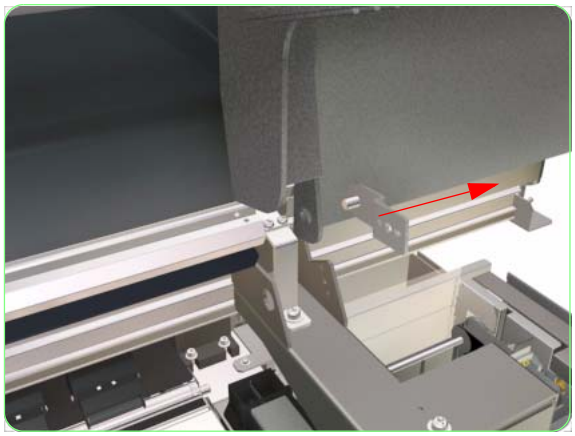
Wiping Door

Removal

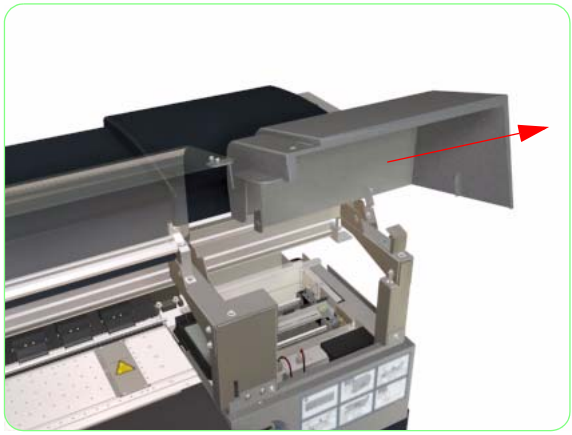
Switch off the product and remove the power cable.



1. Remove one screw that secures the Wiping Door hinge to the Printer.



2. Remove the Hinge from the Printer.

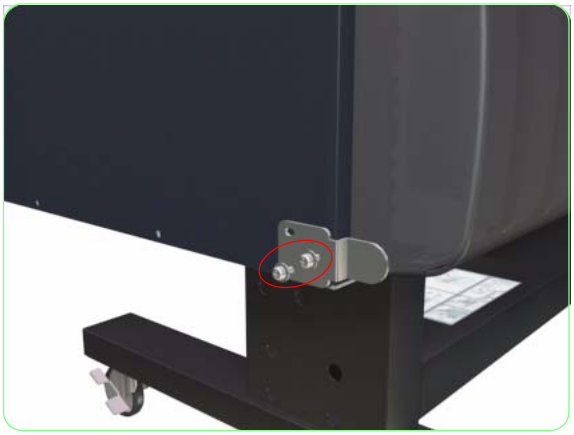


3. Slide the Wiping Door to the right and remove from the Printer.

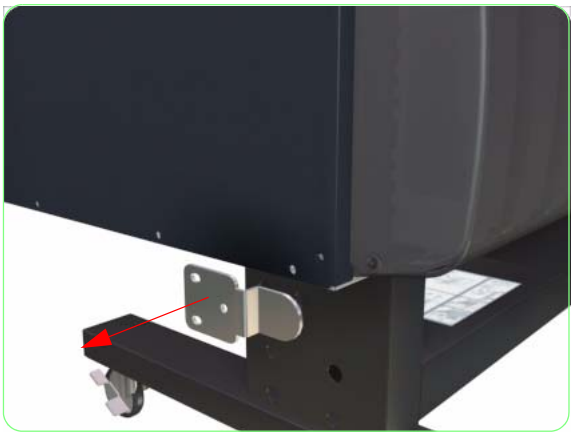
Ink Cartridge Door (Left or Right)

Removal

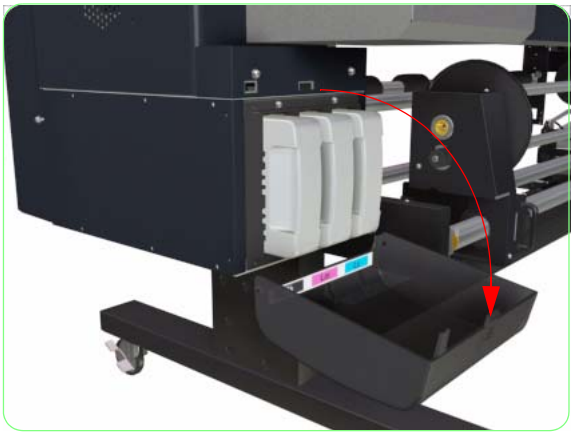
Switch off the product and remove the power cable.



1. Remove one screw that secures the Ink Cartridge Door Hinge to the Printer.



2. Remove the Hinge from the Printer.



3. Open the Ink Cartridge Door and remove from the Printer.

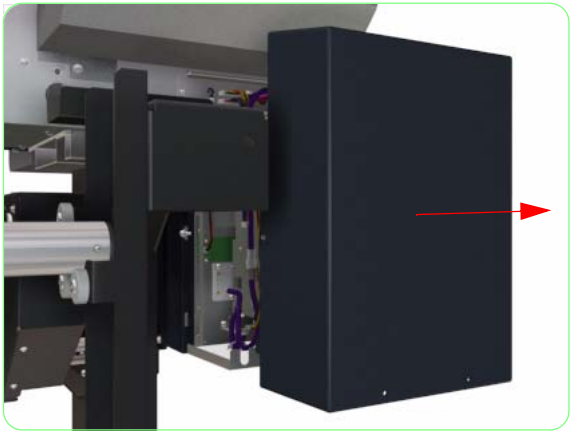
Rear Ink Cartridge Cover (Left or Right)

Removal

Switch off the product and remove the power cable.

1. Remove three screws that secure the Rear Ink Cartridge Cover to the Printer.

2. Loosen one screw that secures the Rear Ink Cartridge Cover to the Printer.



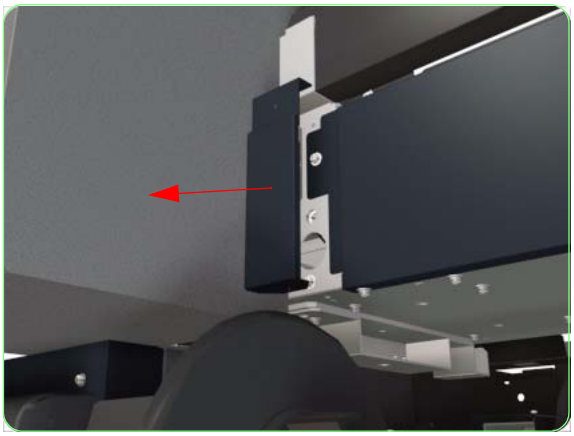
3. Remove the Rear Ink Cartridge Cover from the Printer.

Electronics Module Cover

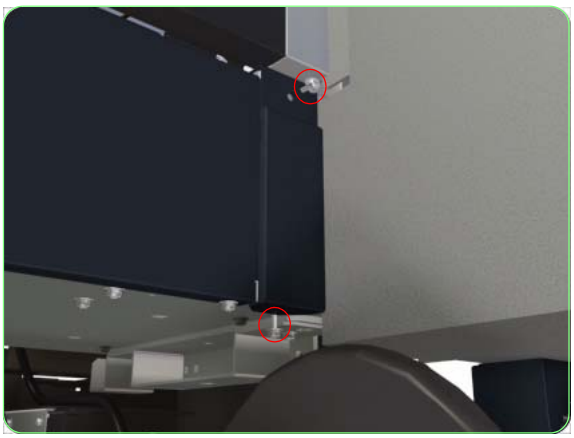
Removal

Switch off the product and remove the power cable.

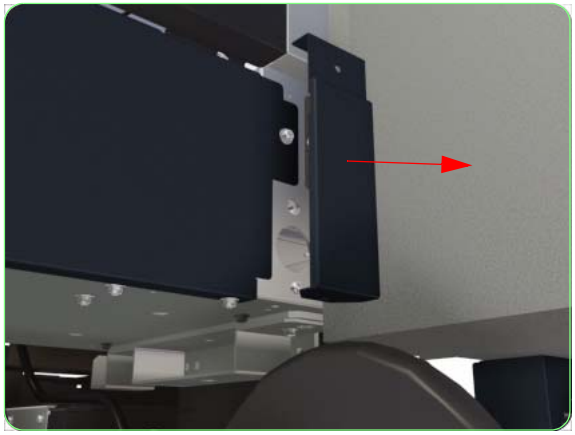
1. Remove two screws that secure the Left Electronics Module Side Trim to the Printer.



2. Remove the Left Electronics Module Side Trim from the Printer.



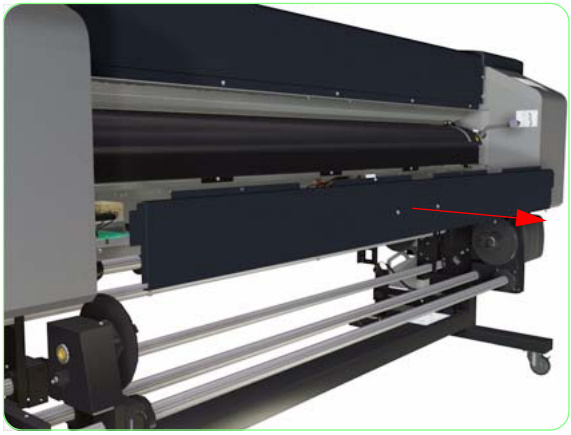
3. Remove two screws that secure the Right Electronics Module Side Trim to the Printer.



4. Remove the Right Electronics Module Side Trim from the Printer.

5. Loosen 5 screws that secure the Electronics Module Cover to the Printer.

6. Remove six screws that secure the Electronics Module Cover to the Printer.

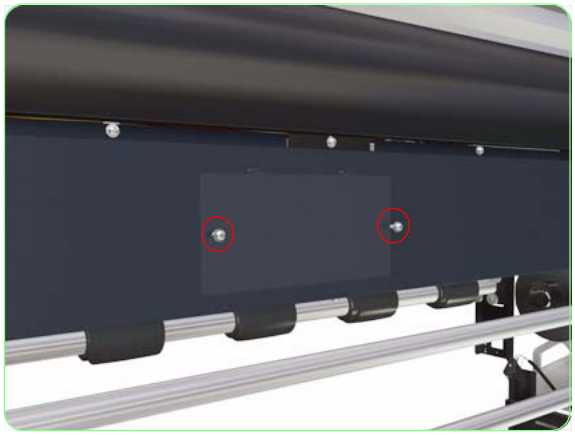


7. Remove the Electronics Module Cover from the Printer.

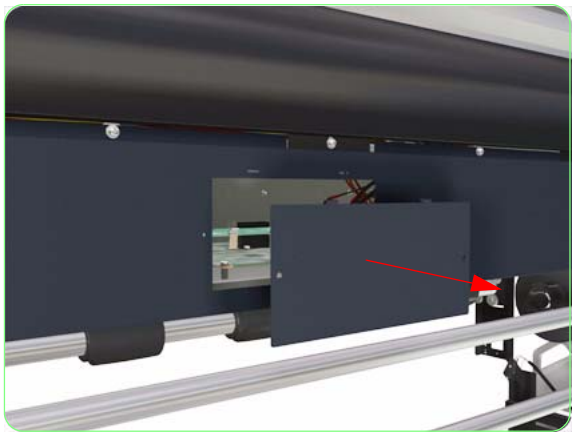
Firmware Access Cover

Removal

Switch off the product and remove the power cable.



1. Remove two screws that secure the Firmware Access Cover to the Printer.



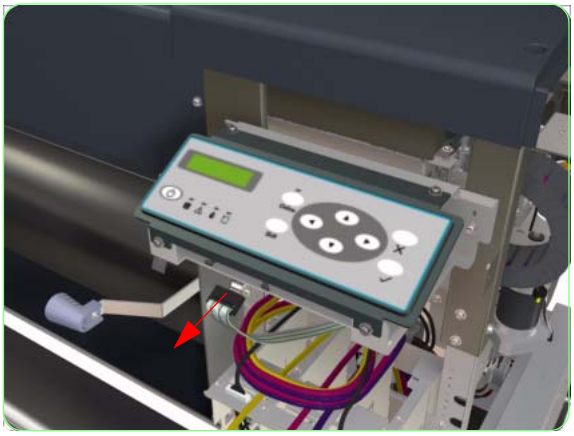
2. Remove the Firmware Access Cover from the Printer.

Front Panel

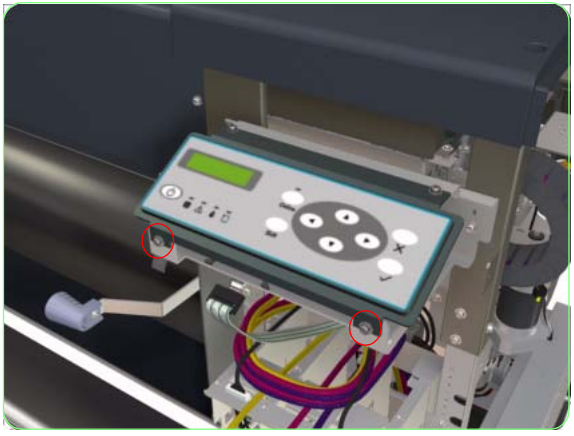
Removal

Switch off the product and remove the power cable.

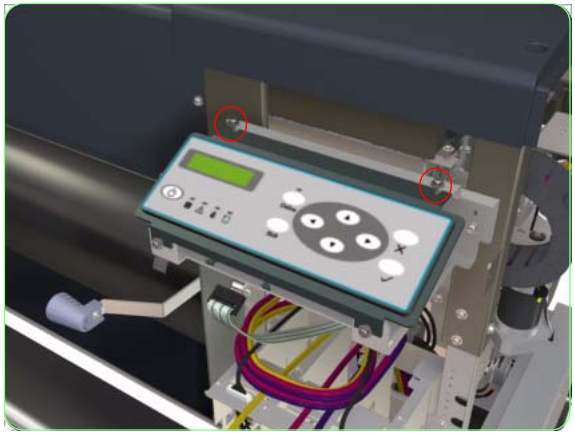
1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Lower Side Cover (Right) ⇒ Page *8-8*.
3. Remove the Right Subtank Cover ⇒ Page *8-11*.



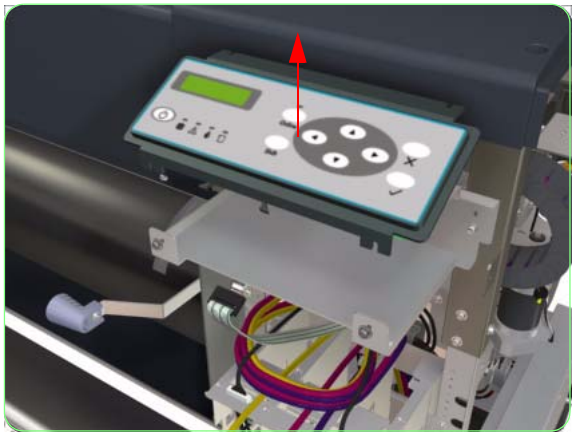
4. Disconnect the Front Panel Cable from the Front Panel.



5. Loosen two screws that secure the Front Panel to the Printer.



6. Remove two screws that secure the Front Panel to the Printer.



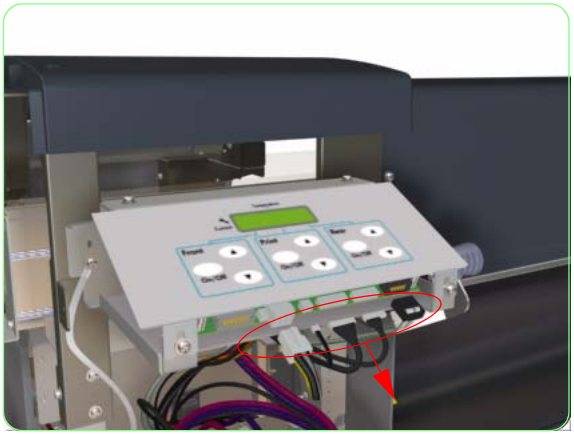
7. Remove the Front Panel from the Printer.

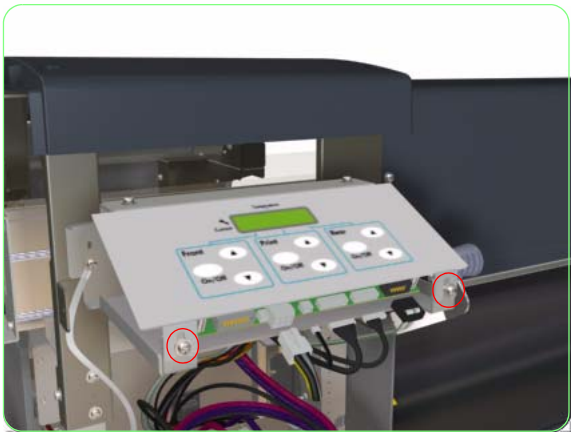
Heater Panel

Removal

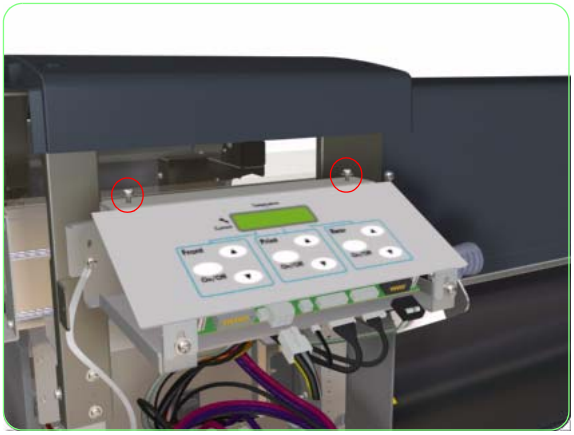
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Left) ⇒ Page *8-4*.
2. Remove the Lower Side Cover (Left) ⇒ Page *8-8*.
3. Remove the Left Subtank Cover ⇒ Page *8-11*.
4. Disconnect ALL the Heater Panel Cables from the Heater Panel.

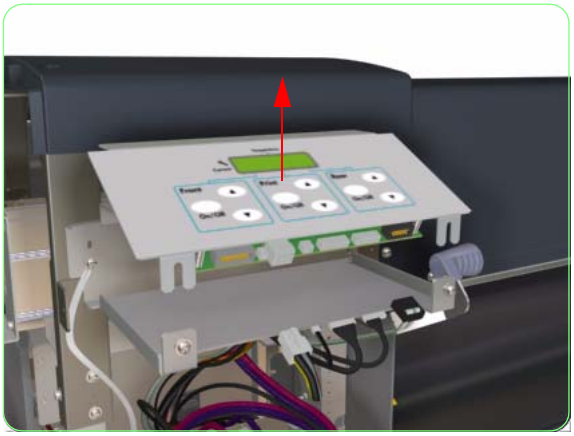




5. Loosen two screws that secure the Heater Panel to the Printer.



6. Remove two screws that secure the Heater Panel to the Printer.



7. Remove the Heater Panel from the Printer.

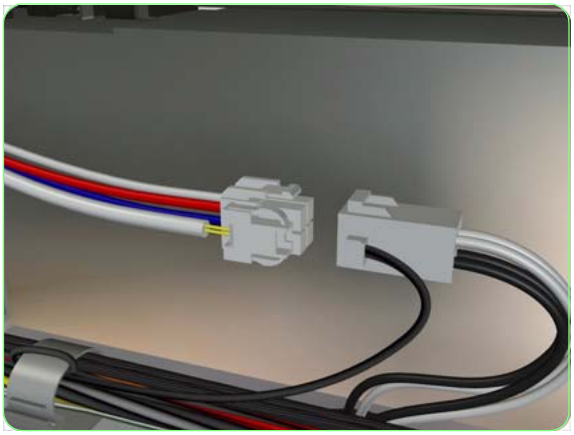
Front Heater

Removal

Switch off the product and remove the power cable.

1. Remove seven screws that secure the Front Heater to the Printer.

2. Pull out the Front Heater slightly.



3. Disconnect the Front Heater Cable from the Front Heater.

4. Remove the Front Heater from the Printer.

Rear Heater

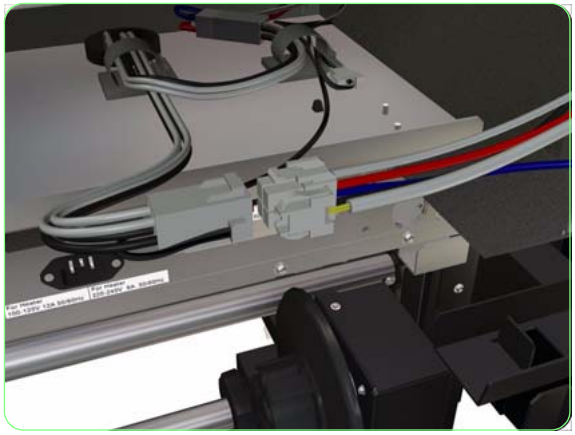
Removal

Switch off the product and remove the power cable.

1. Remove five screws that secure the Rear Heater to the Printer.

2. Remove seven screws that secure the Rear Heater to the Printer.

3. Pull out the Rear Heater slightly.



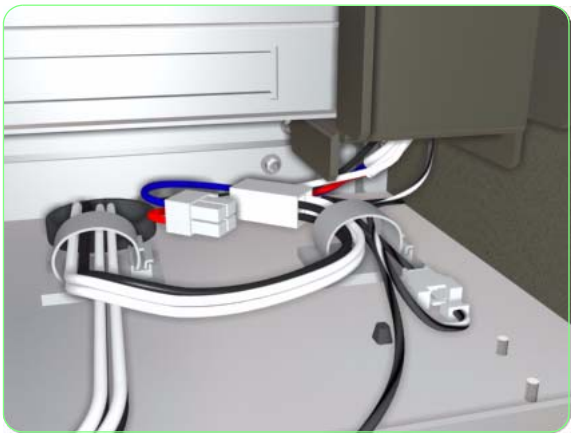
4. Disconnect the Rear Heater Cable from the Rear Heater.

5. Remove the Rear Heater from the Printer.

Center Platen

Removal

Switch off the product and remove the power cable.



1. Remove the Rear Heater ⇒ Page *8-31*.
2. Disconnect ALL the cables connected to the Center Platen.

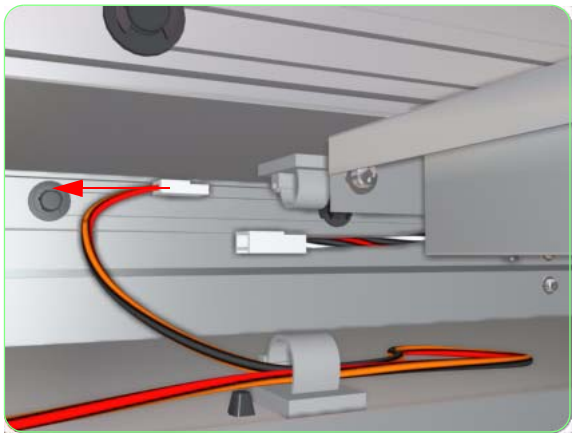
3. Remove 35 screws that secure the Center Platen to the Printer.

4. Remove the Center Platen from the Printer.

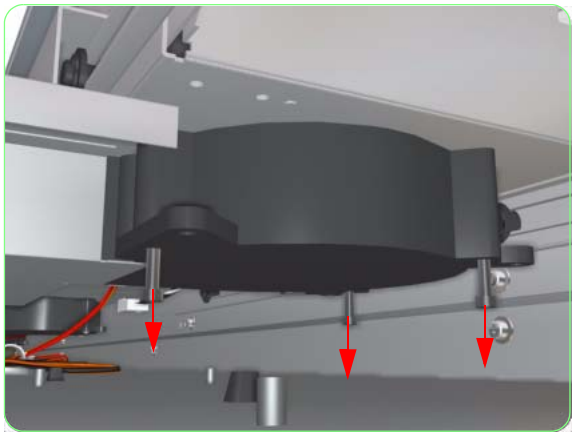
Vacuum Fan

Removal

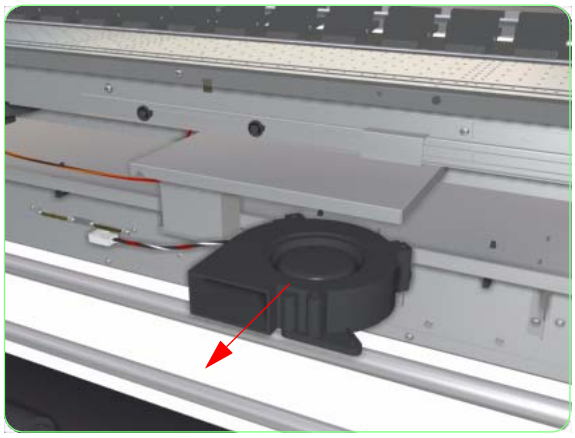
Switch off the product and remove the power cable.



1. Remove the Rear Heater ⇒ Page *8-31*.
2. Disconnect the Vacuum Fan Cable.



3. Remove 3 screws that secure the Vacuum Fan to the Printer.



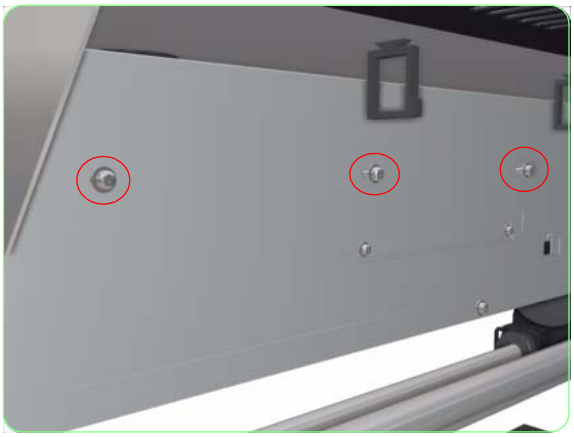
4. Remove the Vacuum Fan from the Printer.

Main PCA

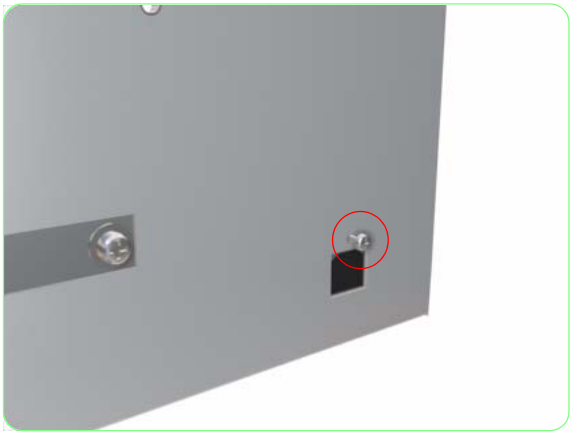
Removal

Switch off the product and remove the power cable.

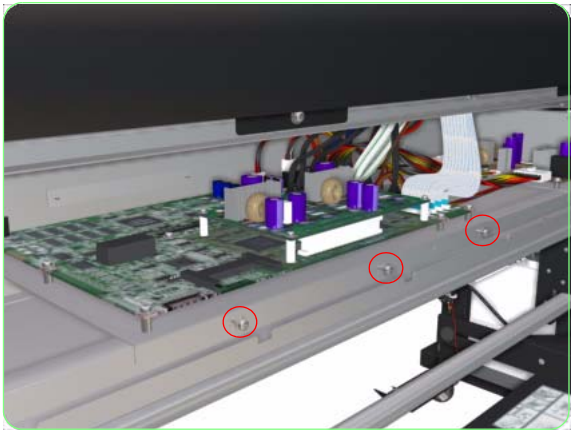
1. Remove the Electronics Module Cover ⇒ Page *8-21*.



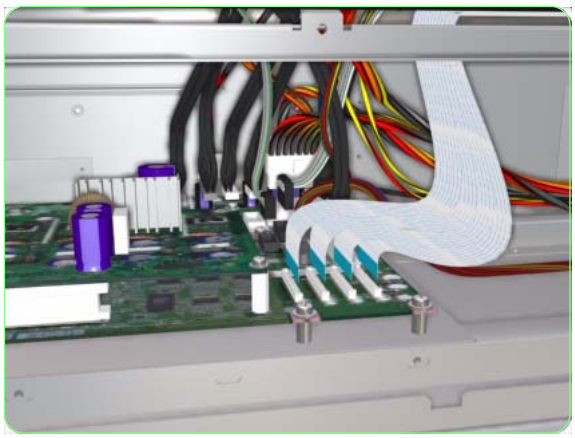
2. Remove three screws that secure the Main PCA Tray to the Printer from the rear.



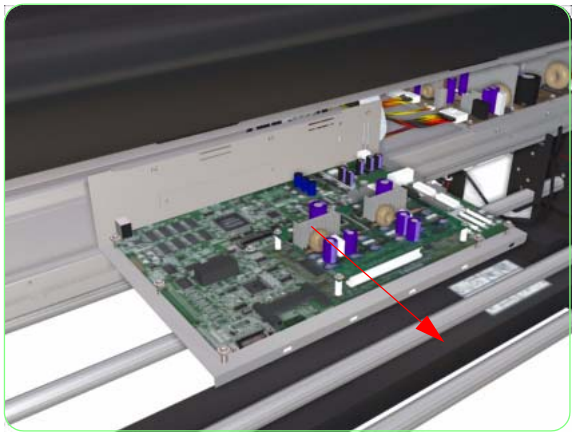
3. Remove one screw that secures the USB Connector to the Printer.



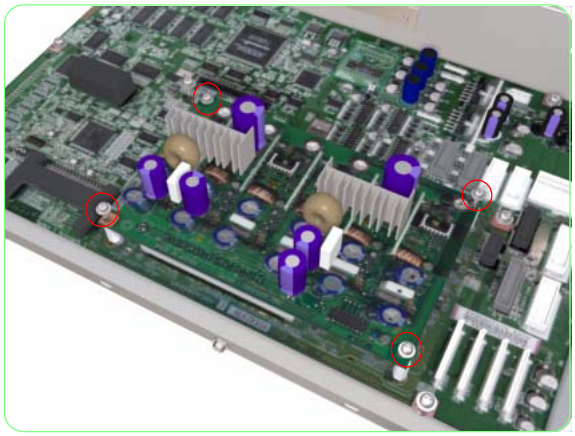
4. Remove three screws that secure the Main PCA Tray to the front of the Printer.



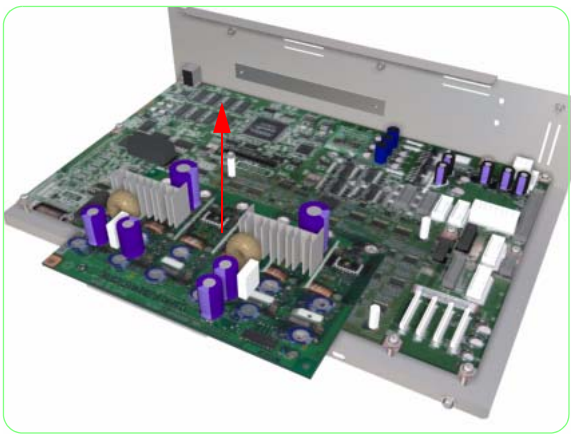
5. Disconnect ALL the cables from the Main PCA.



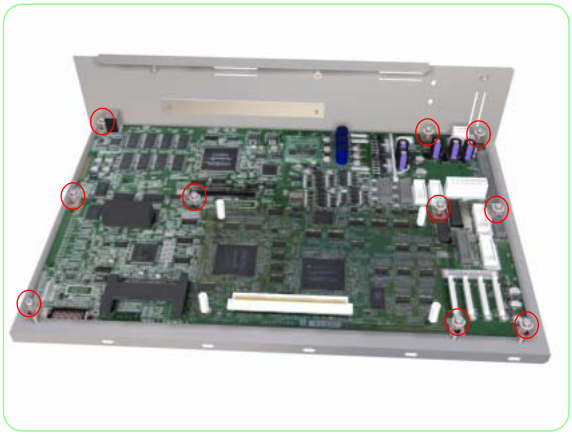
6. Remove the Main PCA Tray from the Printer.



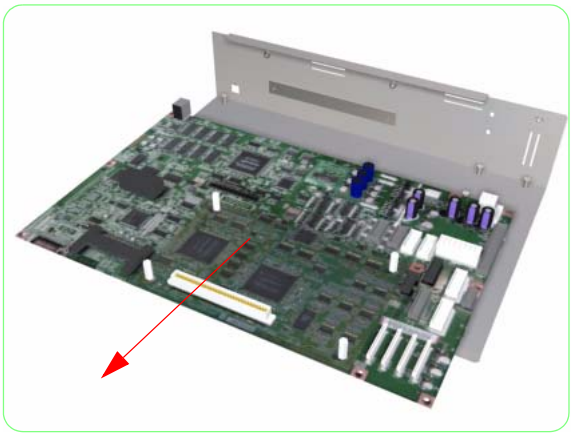
7. Remove four screws that secure the Head Relay Board to the Main PCA.



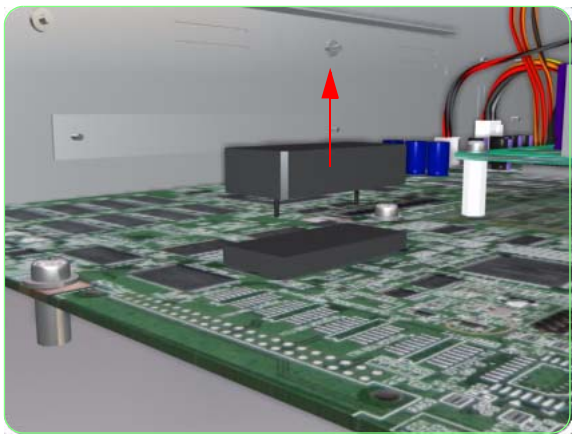
8. Remove the Head Relay Board from the Main PCA.



9. Remove 10 screws that secure the Main PCA to the Tray.



10. Remove the Main PCA from the Tray.



11. Pull up and remove the NVRAM from the Main PCA.

Make sure that you re-install the NVRAM and the Head Relay Board on the NEW Main PCA.

Once the NEW Main PCA is installed, power ON the Printer and do the following:

1. Enter into the Maintenance Mode ⇒ Page *4-7*.

2. Press the **Shift** key once and then the ◀ key to enter in to the Setup menu.

3. In the Setup submenu, scroll to "Save Calibs" and press the **OK** key.

```
# SAVE CALIBS
>
```

4. You will need to confirm that you want to save the NVRAM Calibrations by pressing the **OK** key.

```
# SAVE CALIBS
* OK?
```

5. In the Setup submenu, scroll to "Save NVRAM" and press the **OK** key.

```
# SAVE NVRAM
>
```

6. You will need to confirm that you want to save the NVRAM contents by pressing the **OK** key.

```
# SAVE NVRAM
* OK?
```

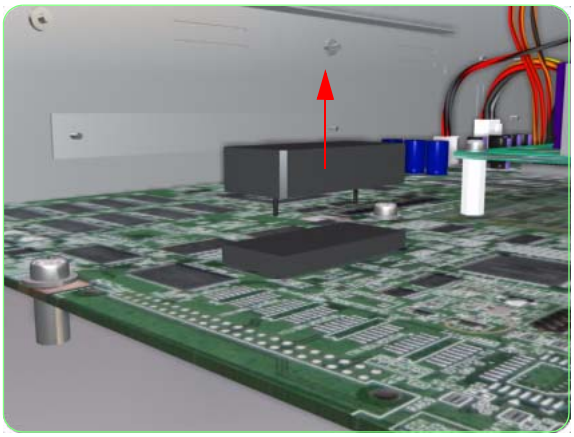
If both the NVRAM and the Main PCA are replaced at the same time, please refer to Chapter 1 for further information.

NVRAM

Removal

Switch off the product and remove the power cable.

1. Remove the Electronics Module Cover ⇒ Page *8-21*.
2. Pull up and remove the NVRAM from the Main PCA.



Once the NEW NVRAM is installed, power ON the Printer and do the following:

1. Enter into the Maintenance Mode ⇒ Page *4-7*.
2. Press the **Shift** key once and then the ◀ key to enter in to the Setup menu.
3. In the Setup submenu, scroll to "NVRAM Init" and press the **OK** key.

```
# NVRAM INIT
>
```

4. You will need to confirm that you want to initialize the NVRAM by pressing the **OK** key.

```
# NVRAM INIT
* OK?
```

5. In the Setup submenu, scroll to "Restore NVRAM" and press the **OK** key.

```
# RESTORE NVRAM
>
```

6. You will need to confirm that you want to restore the NVRAM contents by pressing the **OK** key.

```
# RESTORE NVRAM
* OK?
```

7. Power Off the Printer, wait a few seconds and then power the Printer On again.

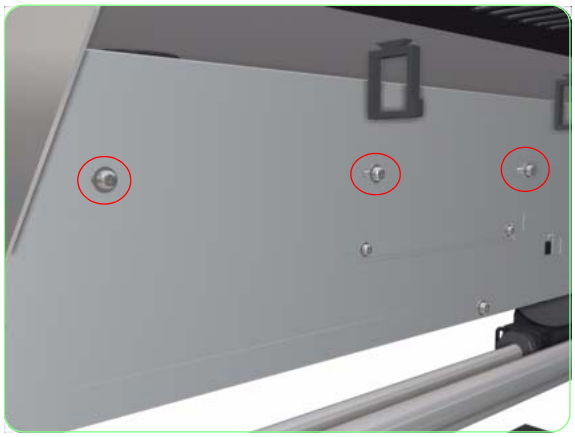
If both the NVRAM and the Main PCA are replaced at the same time, please refer to Chapter 1 for further information.

Head Relay Board

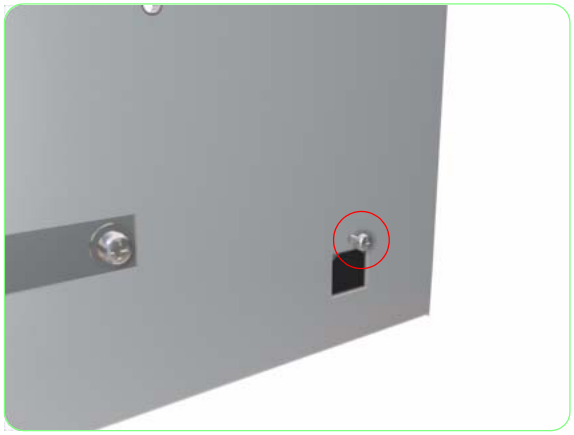
Removal

Switch off the product and remove the power cable.

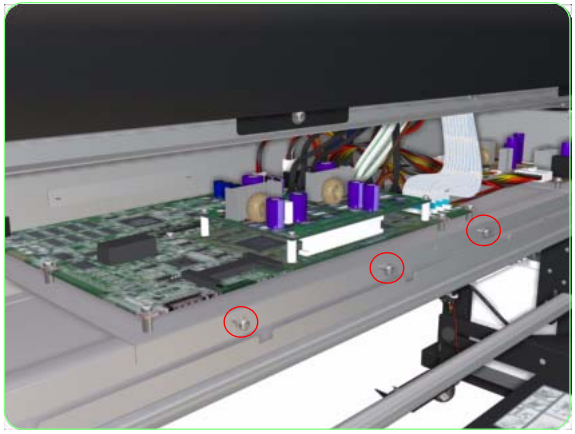
1. Remove the Electronics Module Cover ⇒ Page *8-21*.



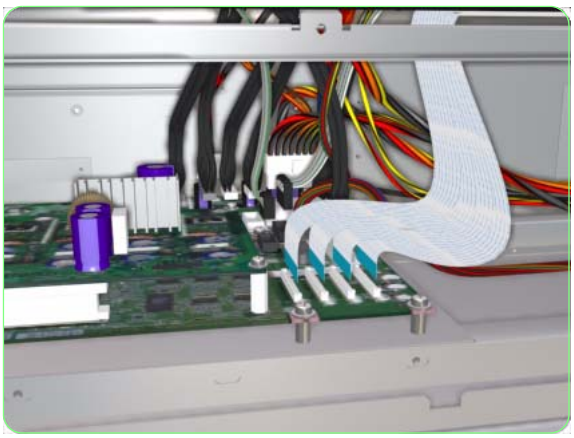
2. Remove three screws that secure the Main PCA Tray to the Printer from the rear.



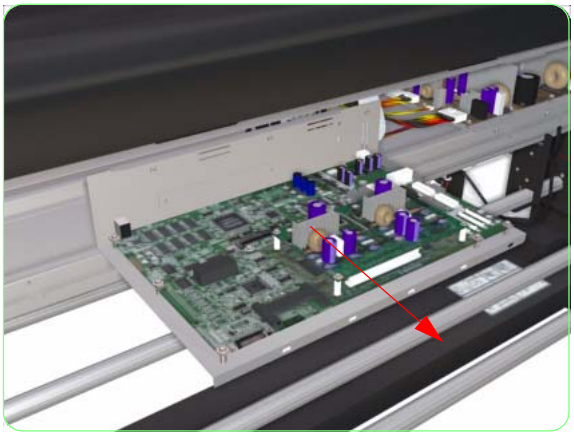
3. Remove one screw that secures the USB Connector to the Printer.



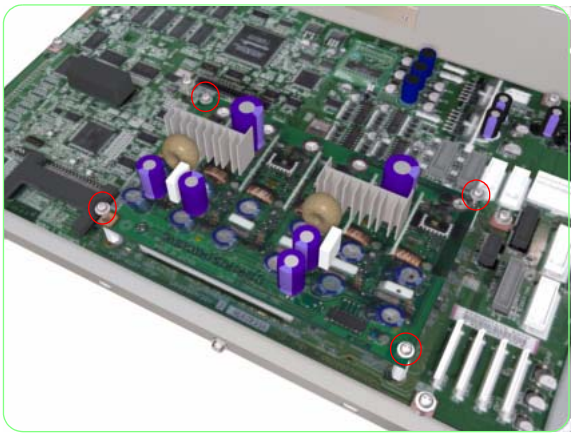
4. Remove three screws that secure the Main PCA Tray to the Printer from the front.



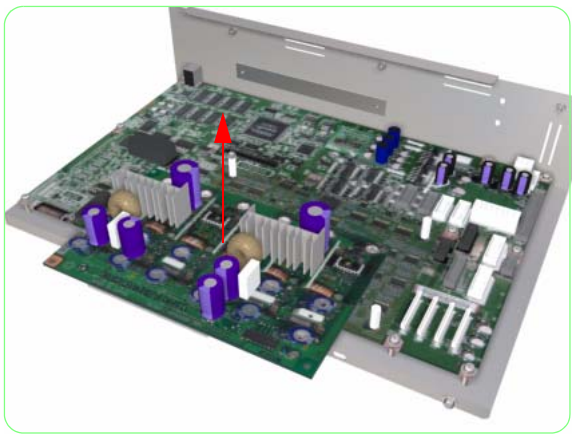
5. Disconnect ALL the cables from the Main PCA.



6. Remove the Main PCA Tray from the Printer.



7. Remove four screws that secure the Head Relay Board to the Main PCA.



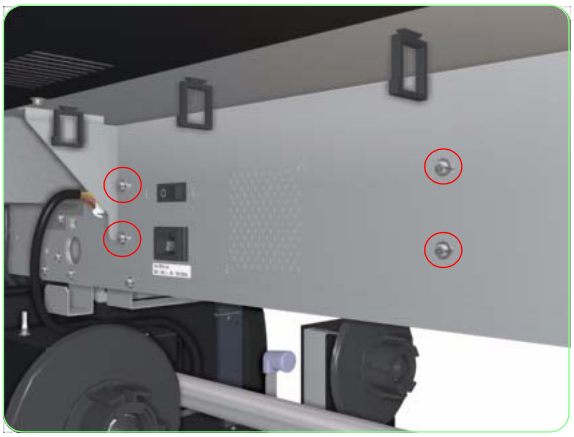
8. Remove the Head Relay Board from the Main PCA.

Power Supply Unit

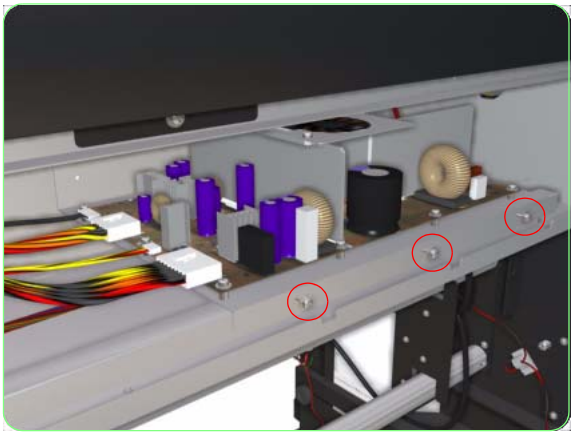
Removal

Switch off the product and remove the power cable.

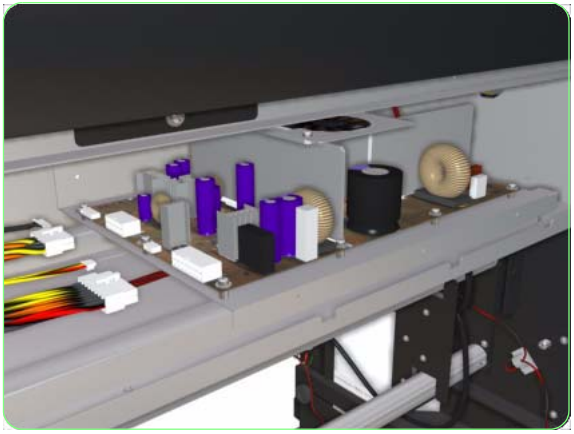
1. Remove the Electronics Module Cover ⇒ Page *8-21*.



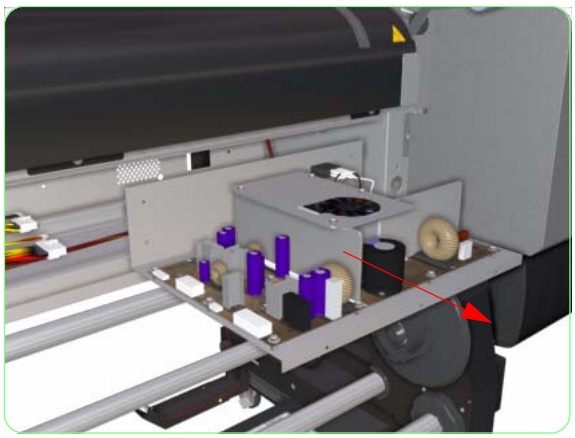
2. Remove four screws that secure the Power Supply Unit to the Printer from the rear.



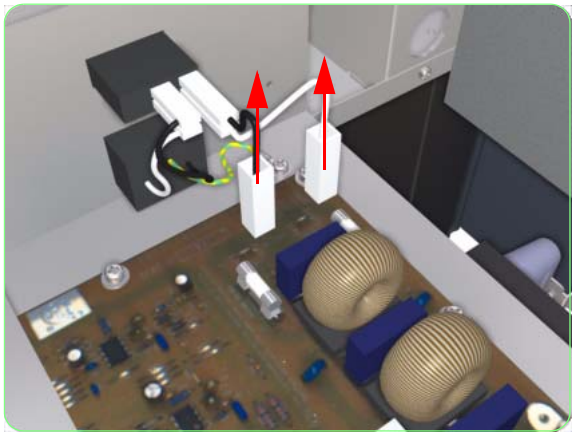
3. Remove three screws that secure the Power Supply Unit to the Printer from the front.



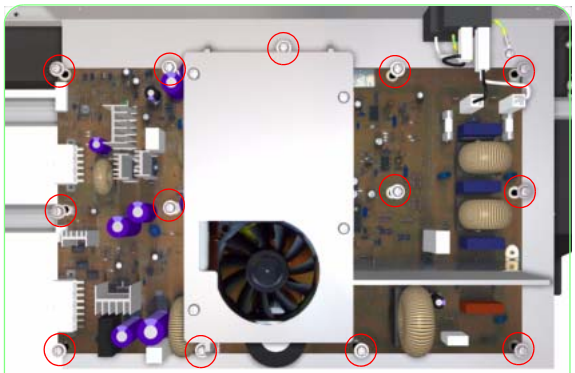
4. Disconnect ALL the cables from the Power Supply Unit.



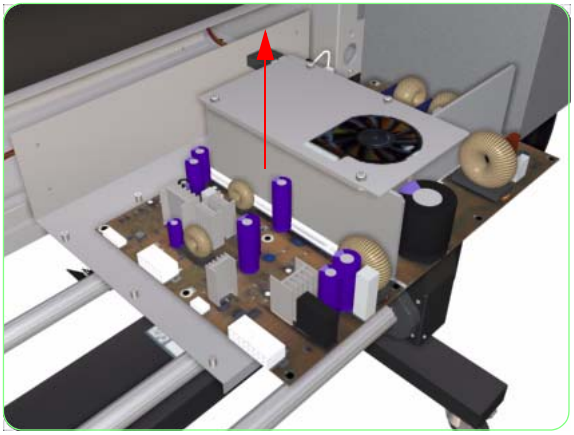
5. Remove the Power Supply Unit (including the Support Tray) from the Printer.



6. Disconnect the cables from the power switch.



7. Remove 13 screws that secure the Power Supply Unit to the Support Tray.



8. Remove the Power Supply Unit from the Support Tray.

Heater Relay Assembly

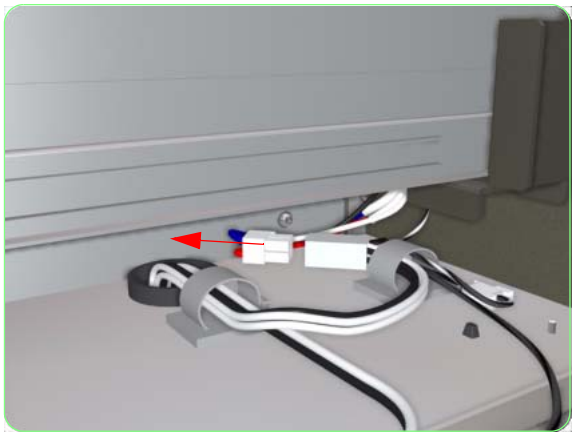
Removal

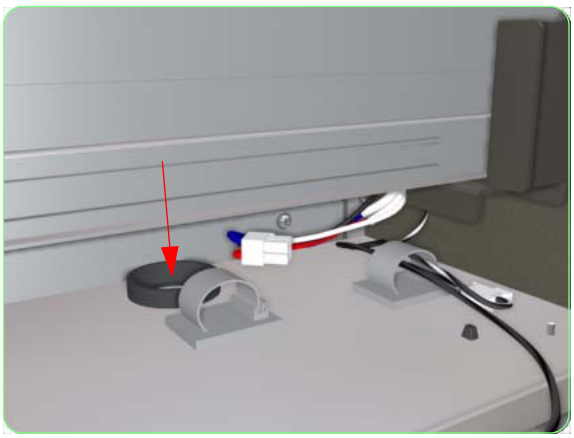
Switch off the product and remove the power cable.

1. Remove the Electronics Module Cover ⇒ Page *8-21*.
2. Remove the Voltage Alternation Panel from the Printer.

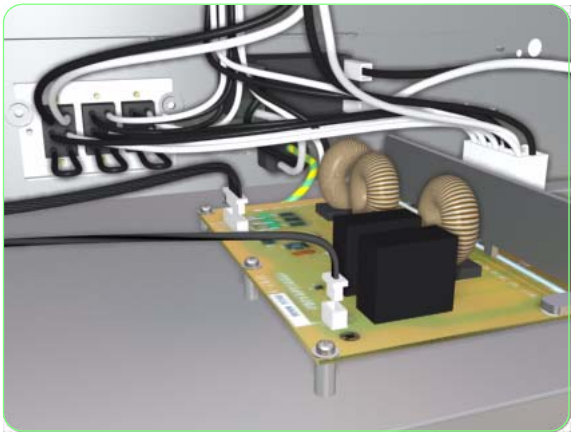
3. Remove three screws that secure the Heater Relay Assembly to the Printer from the rear.

4. Disconnect the Heater Relay Cable.

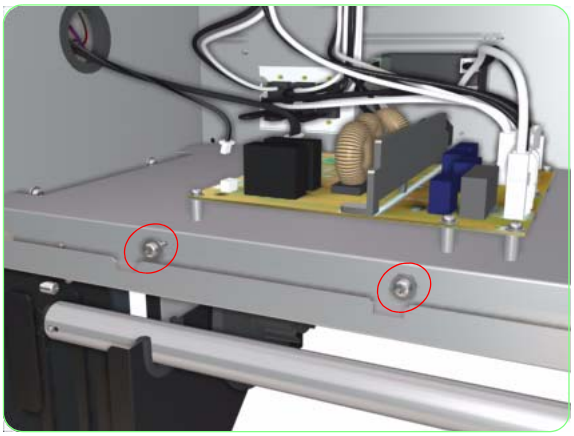




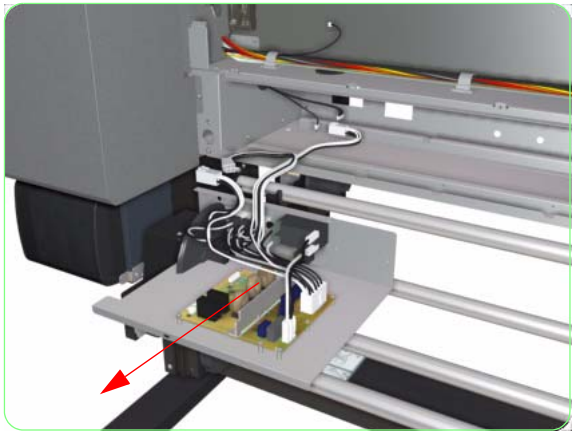
5. Pass the Heater Relay Cable through the hole in the Electronics Module.



6. Disconnect ALL the cables from the Heater Relay Assembly.



7. Remove two screws that secure the Heater Relay Assembly to the Printer.

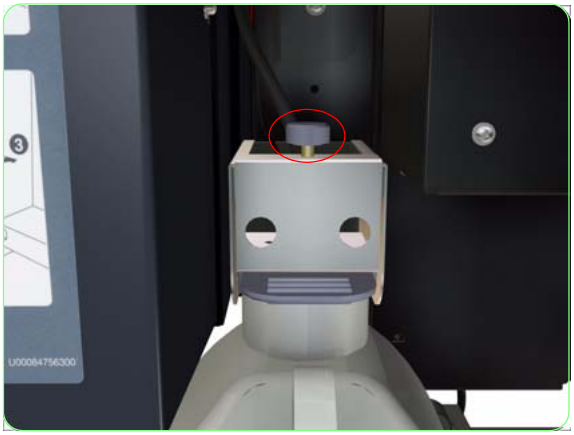


8. Remove the Heater Relay Assembly from the Printer.

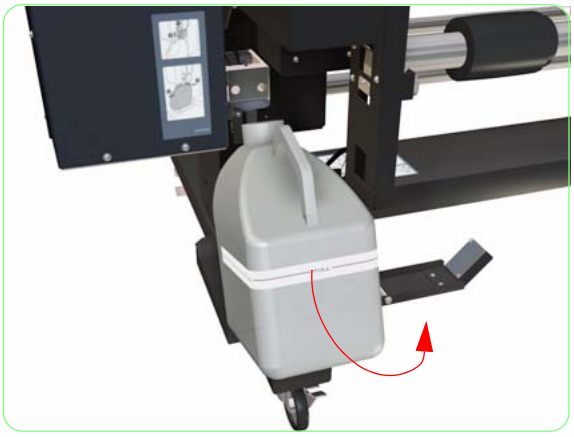
Waste Bottle Sensor

Removal

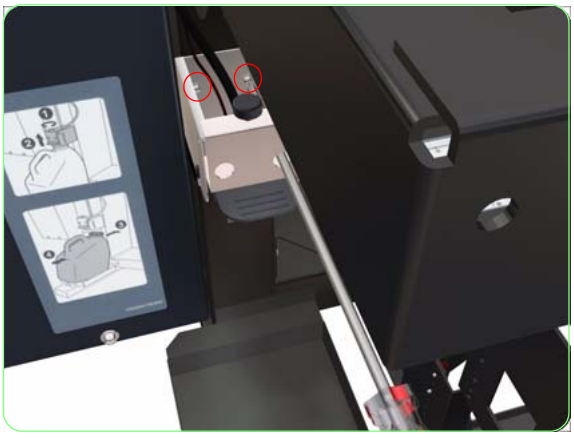
Switch off the product and remove the power cable.



1. Loosen the screw that locks the Waste Bottle Bracket into place.



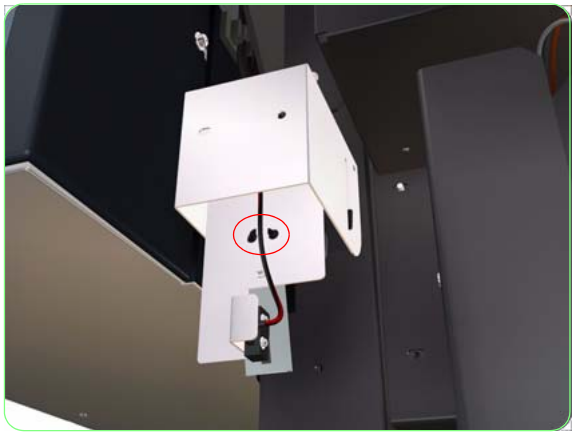
2. Remove the Waste Bottle from the Printer, taking care not to spill any ink contained inside.



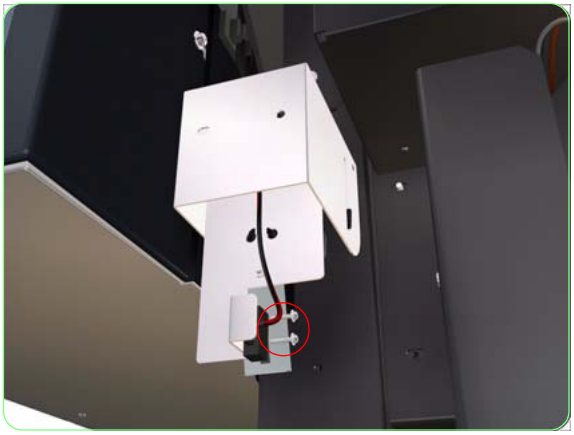
3. Remove two screws that secure the Waste Bottle Bracket to the Printer.

4. Turn the Waste Bottle Bracket 180 degrees so that you can access the Waste Bottle Sensor and Cable.

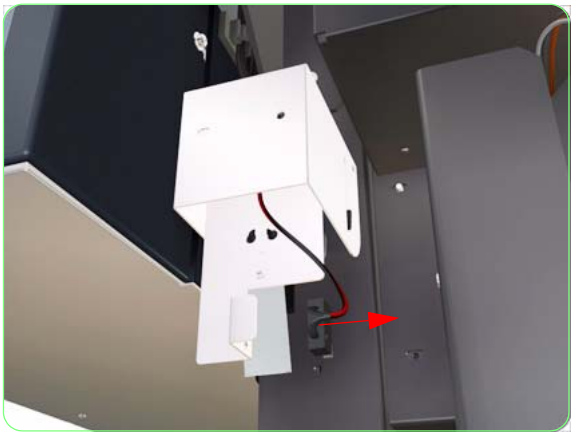
5. Disconnect the Sensor Cable.



6. Cut the cable tie that secures the Sensor Cable to the Bracket.



7. Remove two screws that secure the Waste Bottle Sensor to the Bracket.

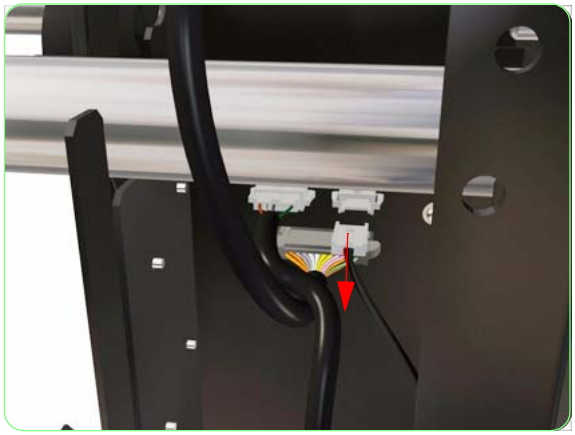


8. Remove the Waste Bottle Sensor from the Printer.

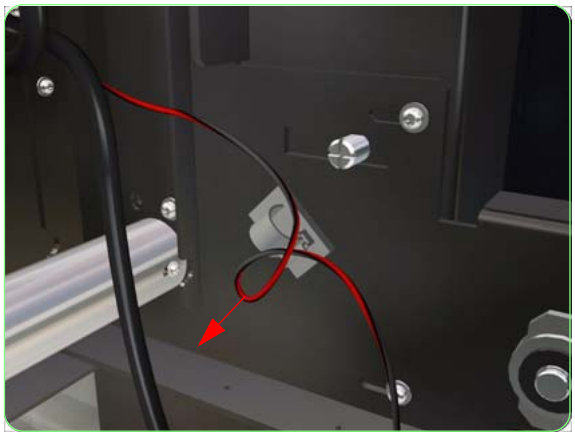
End-of-Media Sensor

Removal

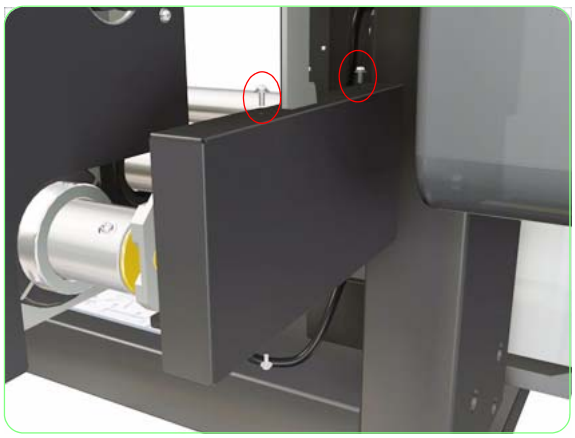
Switch off the product and remove the power cable.



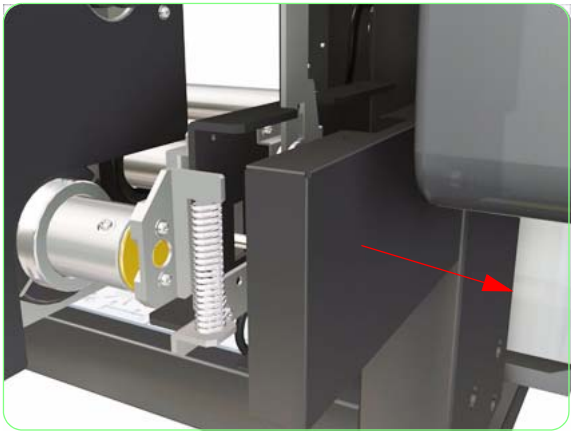
1. Disconnect the End-of-Media Sensor Cable.



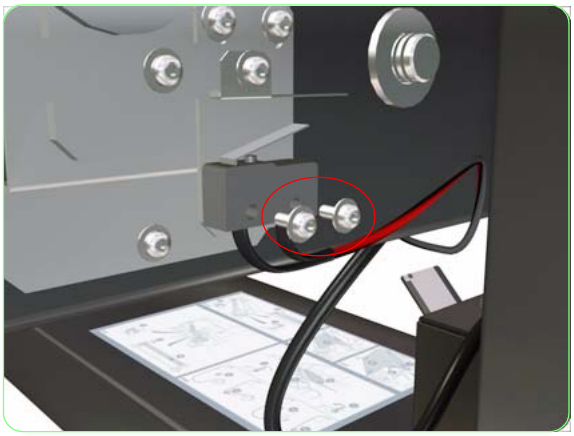
2. Release the End-of-Media Sensor Cable from the Cable Holder.



3. Remove two screws that secure Roll Module Cover.



4. Remove the Roll Module Cover.



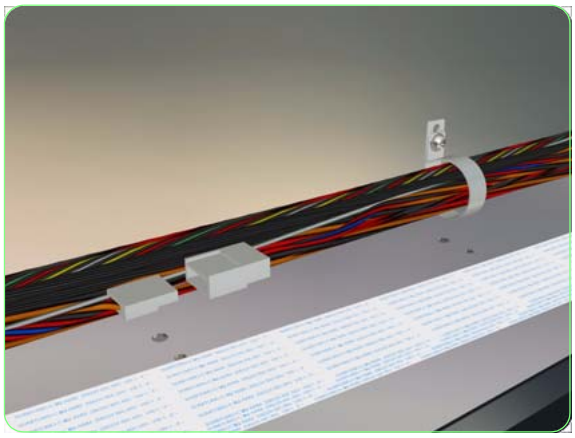
5. Remove two screws that secure the End-of-Media Sensor.

6. Remove the End-of-Media Sensor from the Printer.

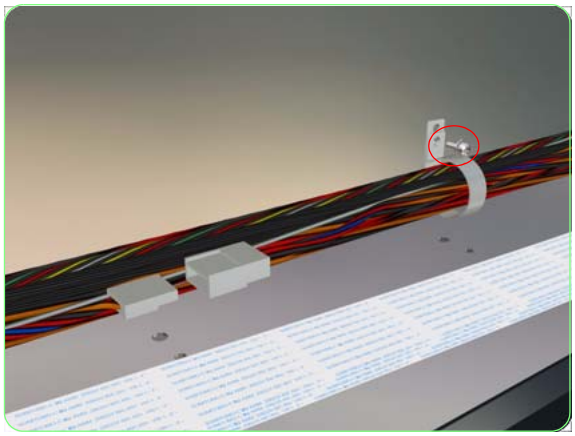
Front Media Sensor

Removal

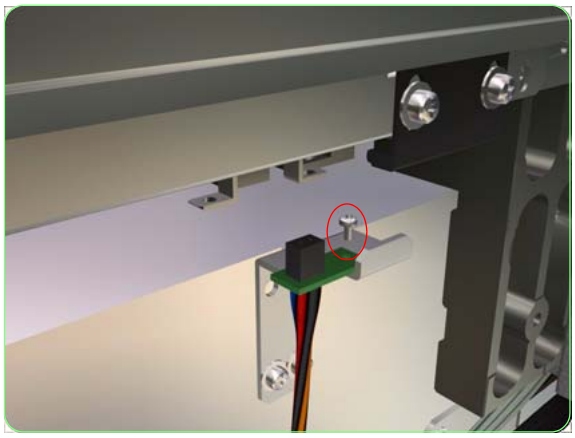
Switch off the product and remove the power cable.



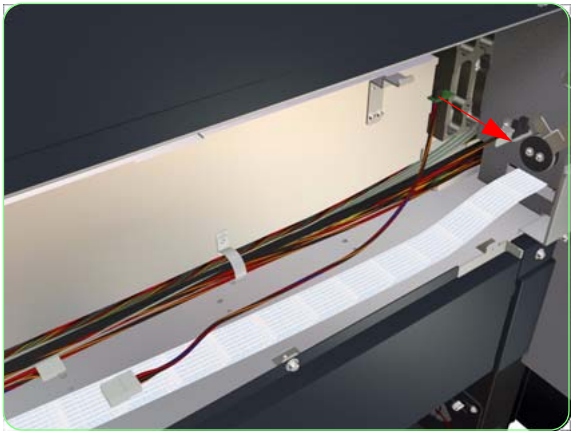
1. Remove the Front Heater ⇒ Page *8-29*.
2. Disconnect the Front Media Sensor Cable.



3. Remove one screw that secure the Cable Holder to the Printer.



4. Remove one screw that secures the Front Media Sensor to the Bracket.

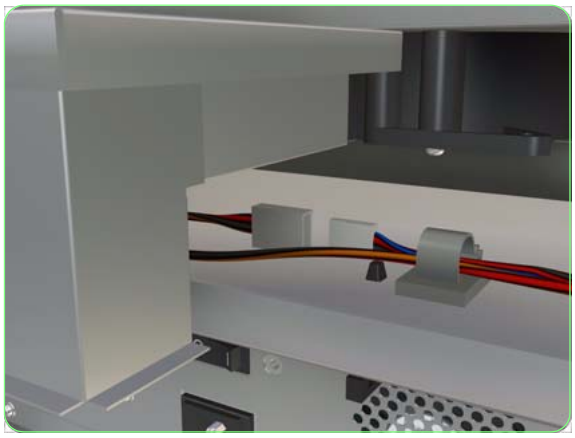


5. Remove the Front Media Sensor from the Printer.

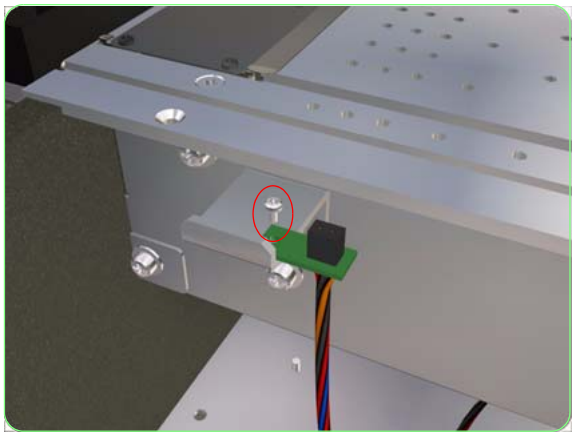
Rear Media Sensor

Removal

Switch off the product and remove the power cable.



1. Remove the Rear Heater ⇒ Page *8-31*.
2. Disconnect the Rear Media Sensor Cable.



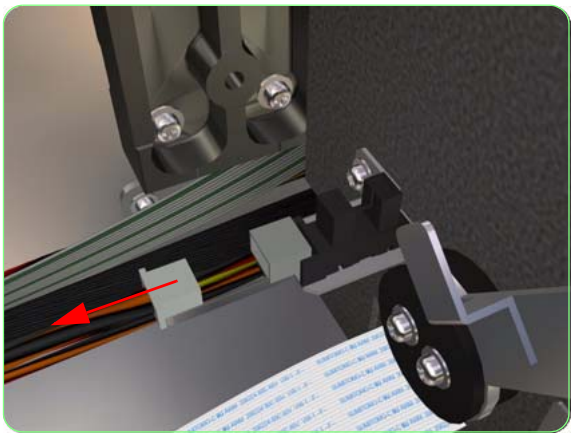
3. Remove one screw that secures the Rear Media Sensor to the Bracket.

4. Remove the Rear Media Sensor from the Printer.

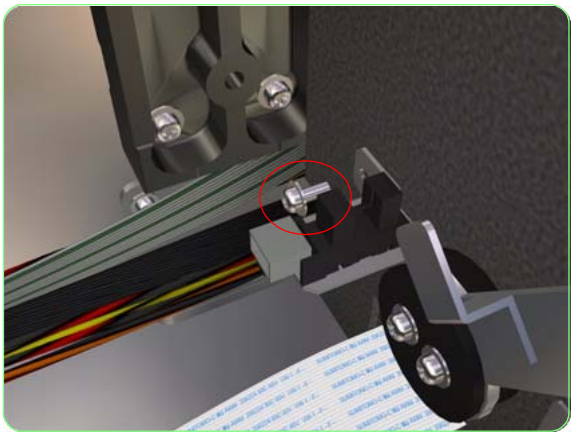
Media Lever Sensor

Removal

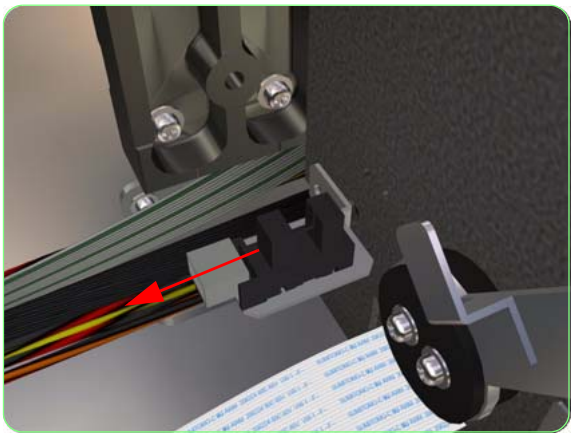
Switch off the product and remove the power cable.



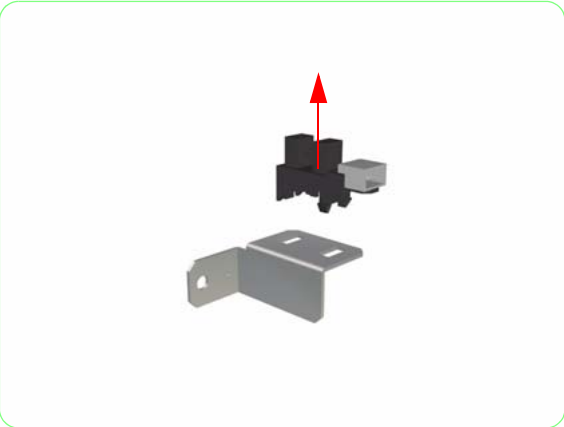
1. Remove the Front Heater ⇒ Page *8-29*.
2. Disconnect the Media Lever Sensor Cable.



3. Remove one screw that secures the Media Lever Sensor to the Bracket.



4. Remove the Media Lever Sensor from the Printer.



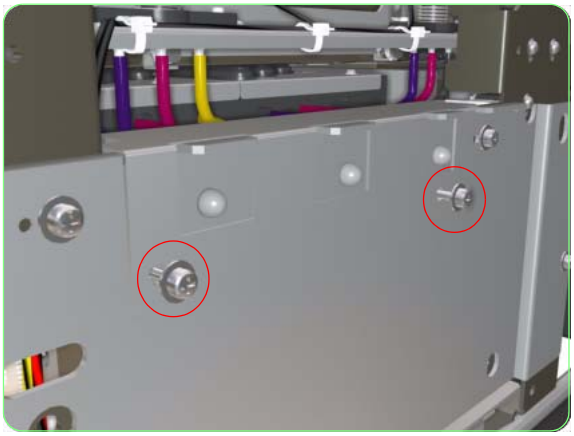
5. Remove the Media Lever Sensor from the Bracket.

Rear Cover Sensor

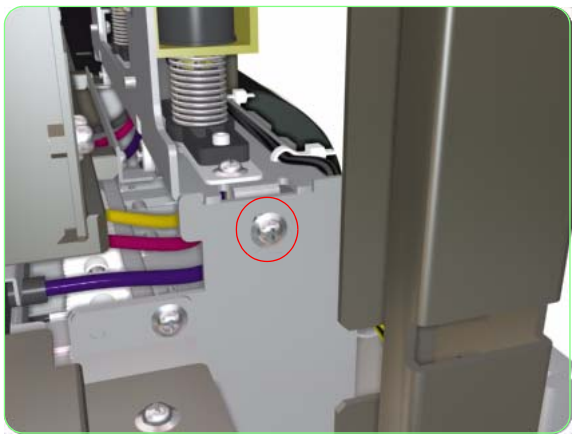
Removal

Switch off the product and remove the power cable.

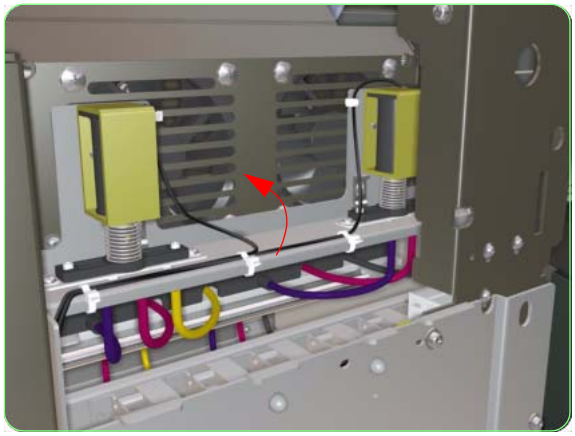
1. Remove the Upper Side Cover (Left and Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Left and Right) ⇒ Page *8-5*.
3. Remove the Lower Side Cover (Left and Right) ⇒ Page *8-8*.
4. Remove the Lower Capping Cover ⇒ Page *8-13*.
5. Remove the Capping Door ⇒ Page *8-15*.
6. Remove the Lower Wiping Cover ⇒ Page *8-16*.
7. Remove the Wiping Door ⇒ Page *8-18*.
8. Remove two screws that secure the metal bracket to the chassis (on the Capping Side).



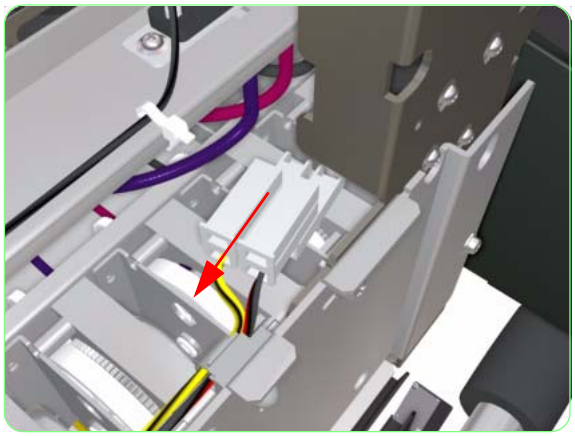
9. Remove the metal bracket from the Printer.



10. Remove one screw from each side of the Solenoid Assembly.



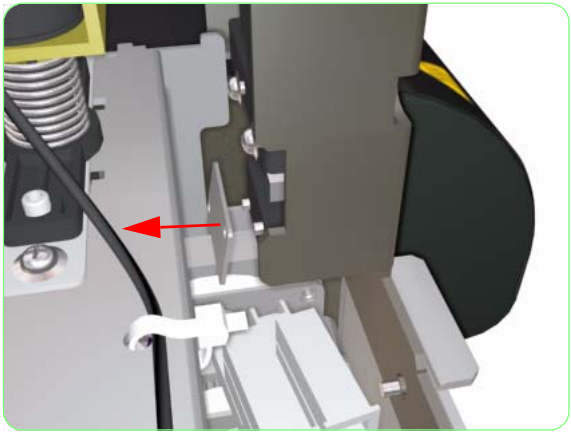
11. Rotate the Solenoid Assembly so that the Right Rear Cover Sensor can be accessed.



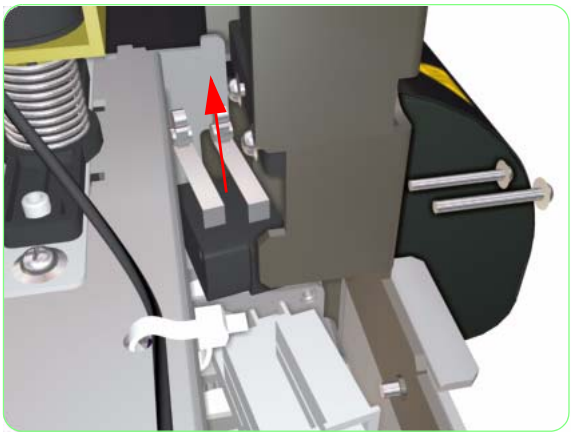
12. Disconnect the Cable from the Right Rear Cover Sensor.

13. Loosen two screws that secure the Sensor Plate and the Right Rear Cover Sensor to the Chassis.

Only loosen the screws until the Sensor Plate is released. Also, keep hold of the Sensor Plate while loosening the screws as it could fall into the Printer.



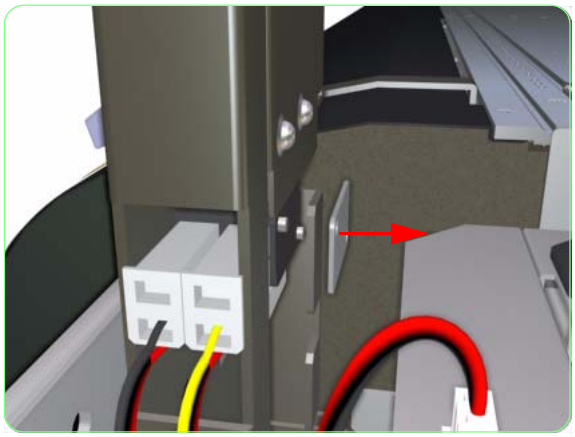
14. Remove the Sensor Plate from the Printer.



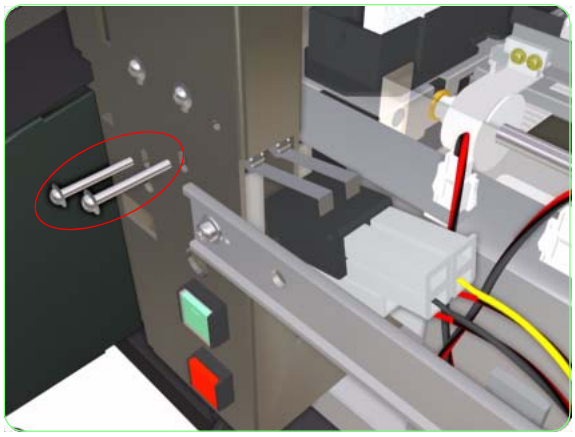
15. Remove two screws that secure the Right Rear Cover Sensor to the Chassis. Remove the Right Rear Cover Sensor.

16. Loosen two screws that secure the Sensor Plate and the Left Rear Cover Sensor to the Chassis.

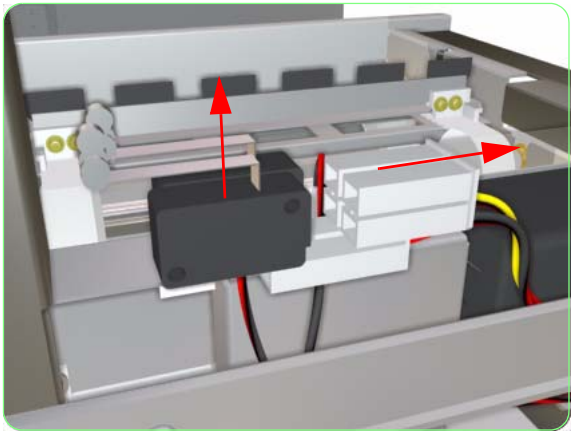
Only loosen the screws until the Sensor Plate is released. Also, keep hold of the Sensor Plate while loosening the screws as it could fall into the Printer.



17. Remove the Sensor Plate from the Printer.



18. Remove two screws that secure the Left Rear Cover Sensor to the Chassis.



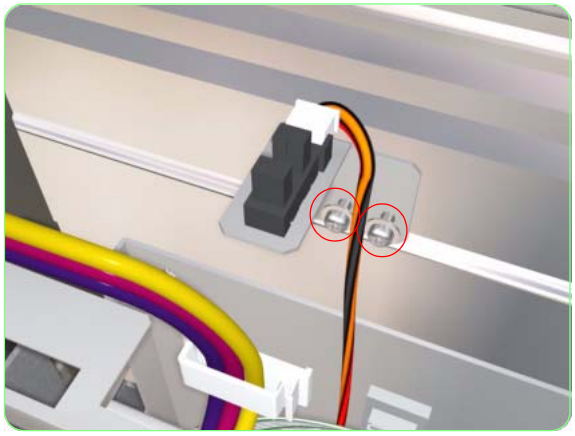
19. Disconnect the Sensor Cable from the Right Rear Cover Sensor and remove from the Printer.

Home Position Sensor

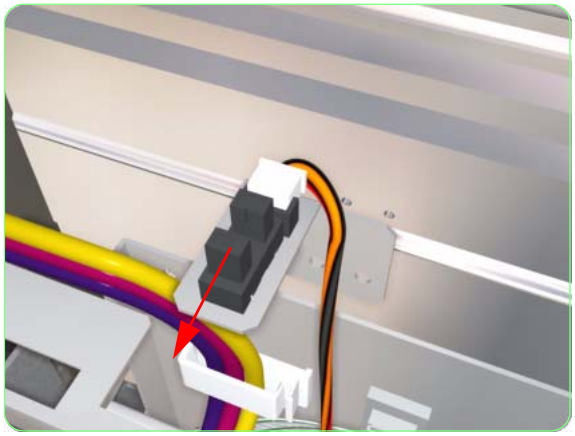
Removal

Switch off the product and remove the power cable.

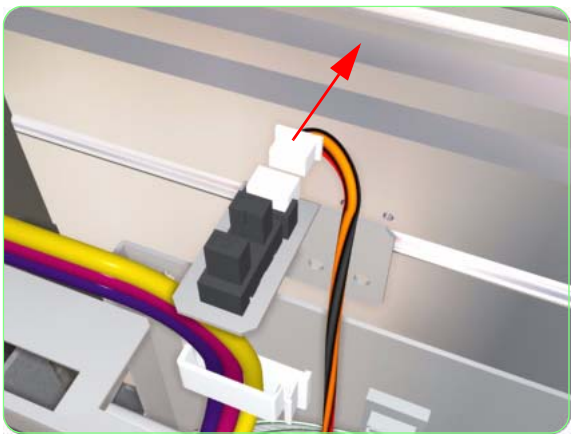
1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Right) ⇒ Page *8-5*.
3. Locate the Home Position Sensor.



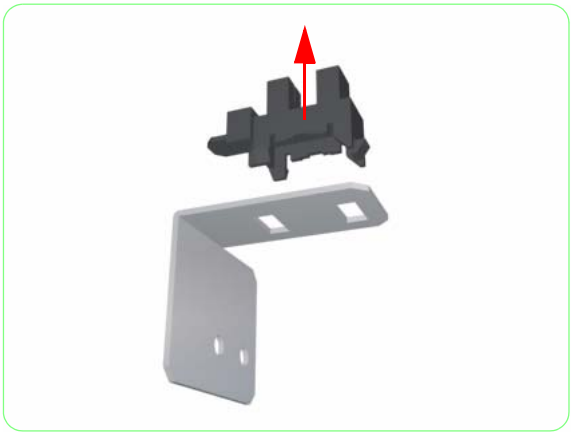
4. Remove two screws that secure the Home Position Sensor to the Printer.



5. Remove the Home Position Sensor from the Printer.



6. Disconnect the Cable from the Home Position Sensor.



7. Unclip the Home Position Sensor from the Support Bracket.

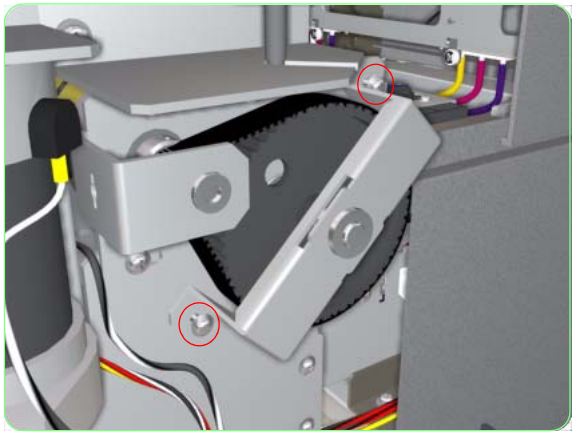
Paper-Axis Motor and Belt

Removal

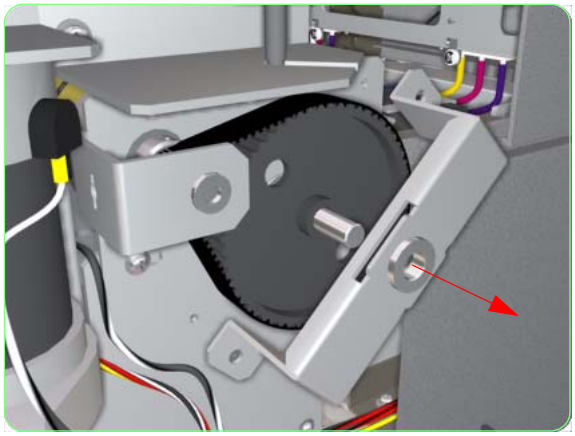
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Right) ⇒ Page *8-5*.

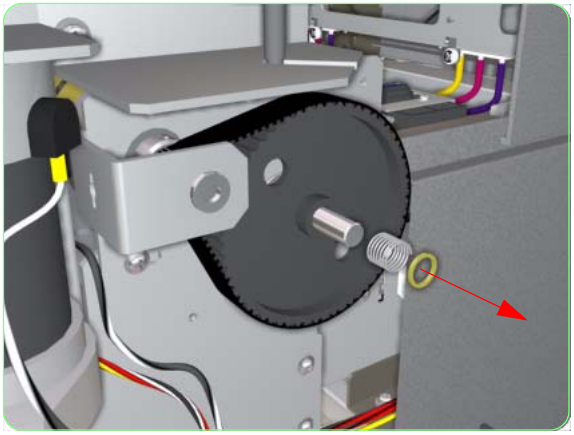
3. Disconnect the Paper-Axis Motor Cables.



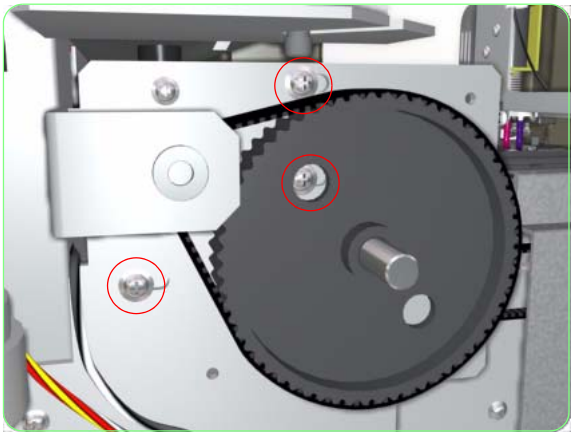
4. Remove two screws that secure the Paper-Axis Gear Plate.



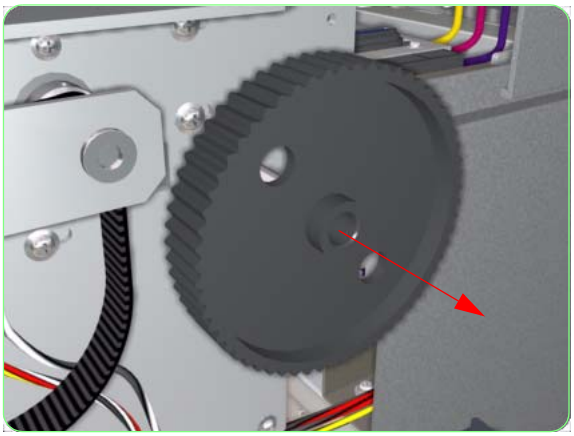
5. Remove the Paper-Axis Gear Plate from the Printer.



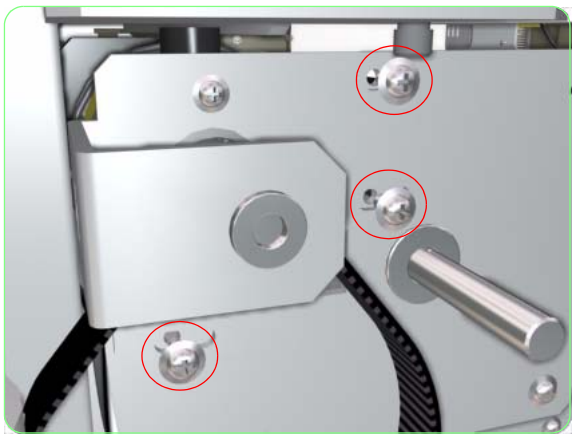
6. Remove the Spring and Washer from the Paper-Axis Gear shaft.



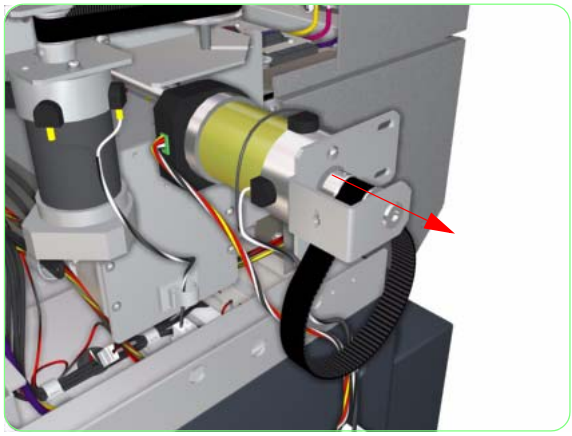
7. Loosen three screws that secure the Paper-Axis Motor Bracket to the Chassis.



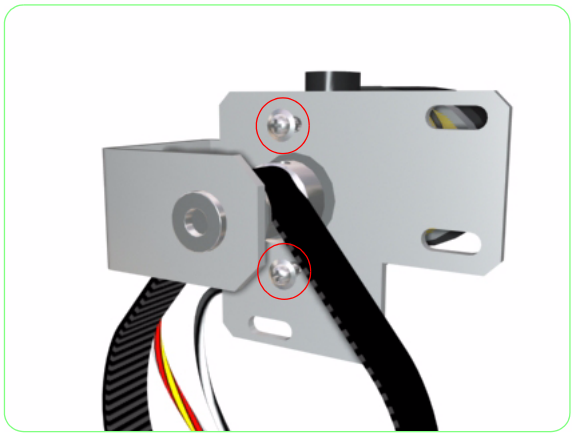
8. Release the Belt and remove the Paper-Axis Gear from the Printer.



9. Remove three screws that secure the Paper-Axis Motor Bracket to the Chassis.



10. Remove the Paper-Axis Motor Assembly from the Printer.



11. Remove two screws that secure the Bracket to the Paper-Axis Motor.

12. Remove the Paper-Axis Motor from the Bracket.

When installing the Paper-Axis Motor, you will need to first remove the Scan-Axis Motor.

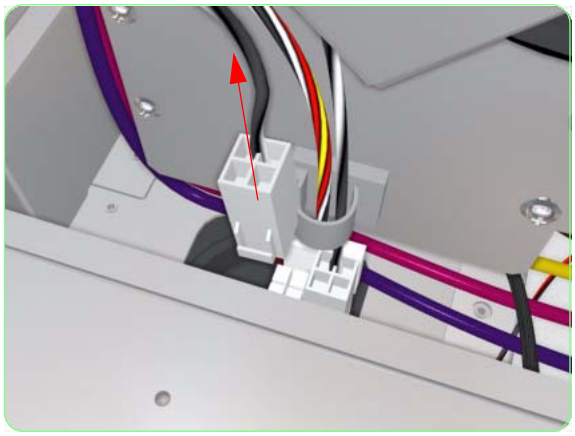
Once the Paper-Axis Motor has been installed correctly, you must perform the Paper-Axis Belt Tension Adjustment. For further information, refer to Page 5-11.

Scan-Axis Motor and Belt

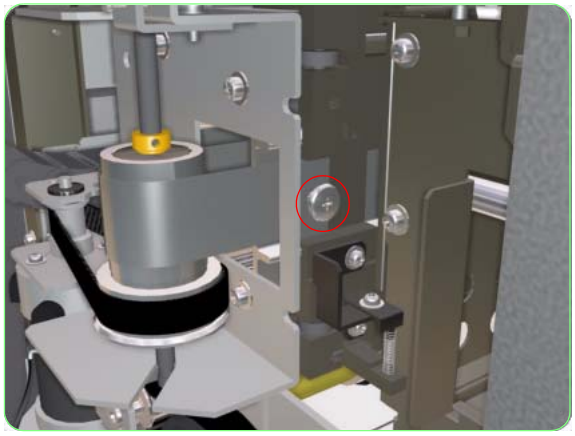
Removal

Switch off the product and remove the power cable.

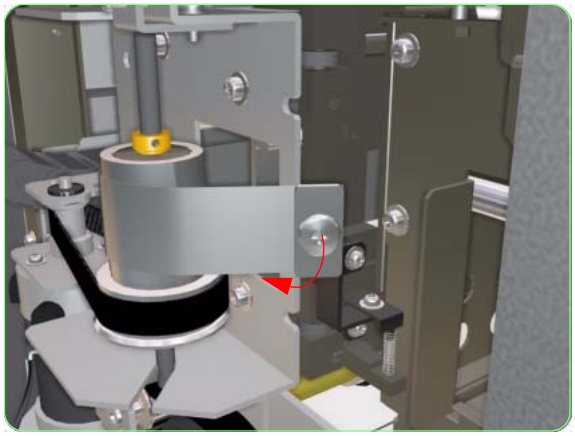
1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Right) ⇒ Page *8-5*.



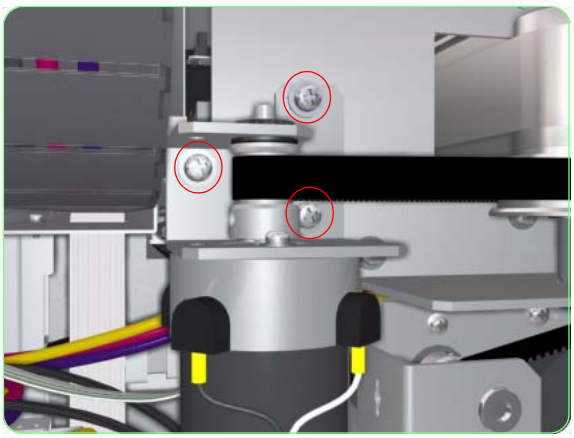
3. Disconnect the Scan-Axis Motor Cable.



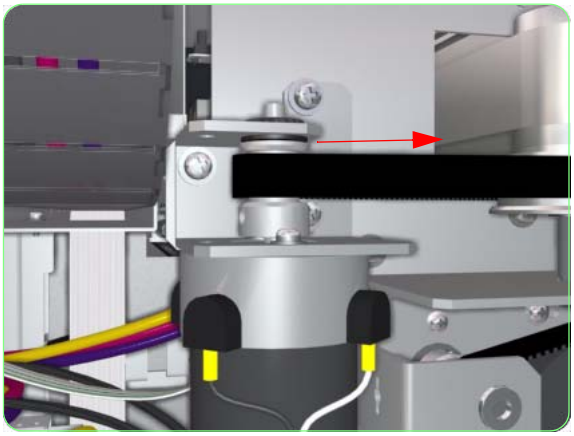
4. Remove one screw that secures the Belt to the left side of the Carriage Assembly.



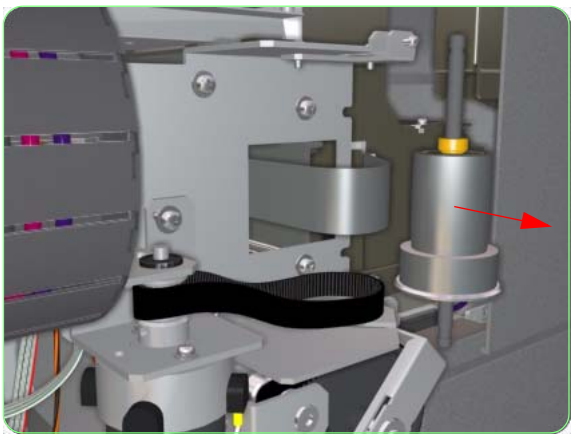
5. Release the Belt from the Carriage Assembly.



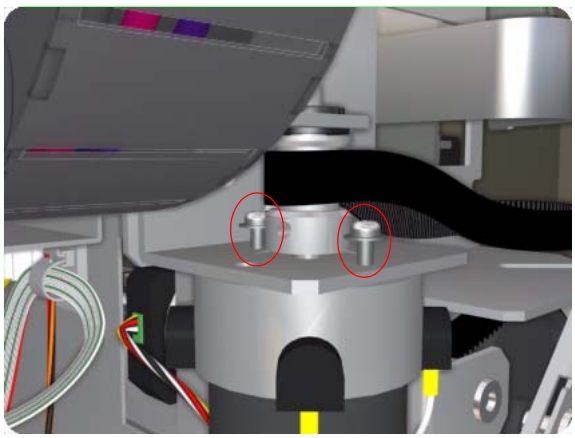
6. Loosen three screws that secure the Scan-Axis Motor Bracket to the Chassis.



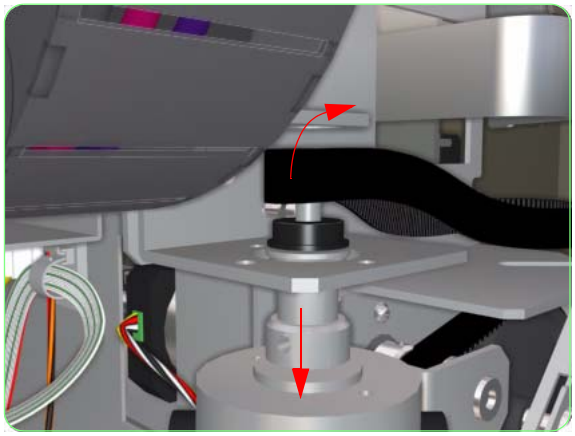
7. Move the Scan-Axis Motor Bracket to the right to release the tension on the Scan-Axis Belt.



8. Release the Scan-Axis Belt and remove the Drive Pulley from the Printer.



9. Remove two screws that secure the Scan-Axis Motor to the Bracket.



10. Release the Scan-Axis Belt and remove the Scan-Axis Motor from the Printer.

11. Remove the Scan-Axis Belt from the Printer.

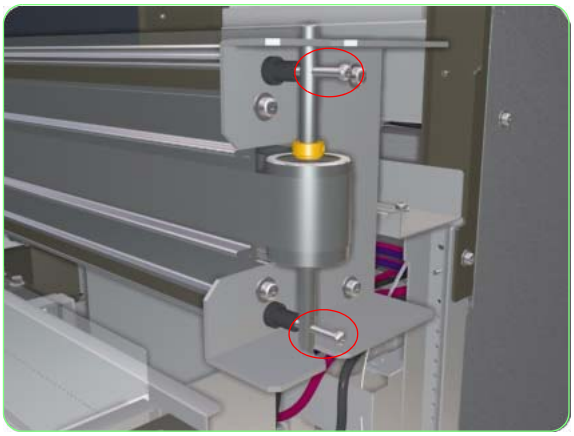
Once the Scan-Axis Motor has been installed correctly, you must perform the Scan-Axis Belt Tension Adjustment (refer to Page 5-9) and the Belt Tension Adjustment (refer to Page 5-3).

Carriage Drive Assembly (Includes Carriage Belt)

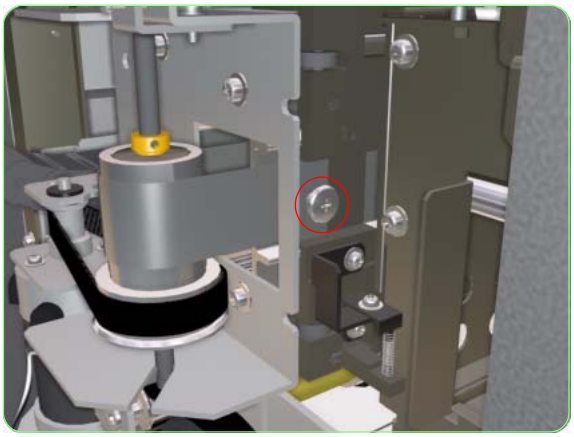
Removal

Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Left and Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Left and Right) ⇒ Page *8-5*.

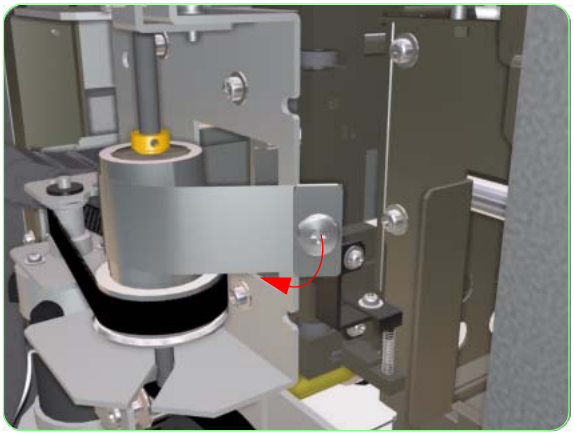


3. Loosen two screws that secure the Tension Pulley.

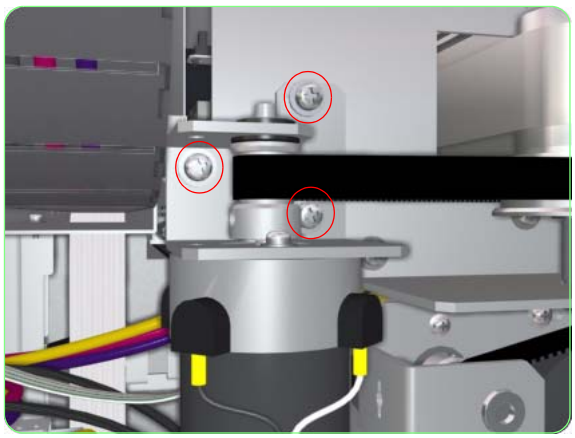


4. Remove one screw that secures the Belt to the left side of the Carriage Assembly.

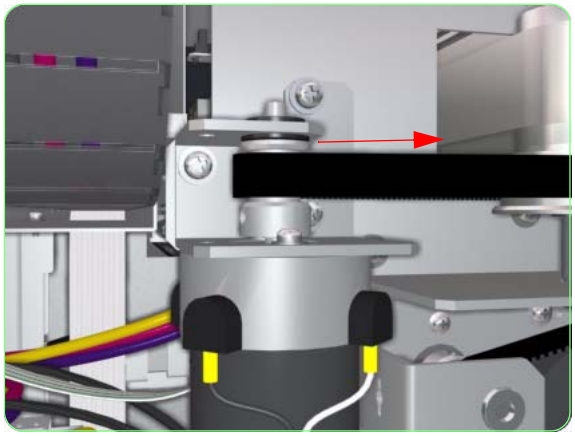
   Be very careful when handling the Belt, since it is sharp and could cause injury.



5. Release the Belt from the Carriage Assembly.



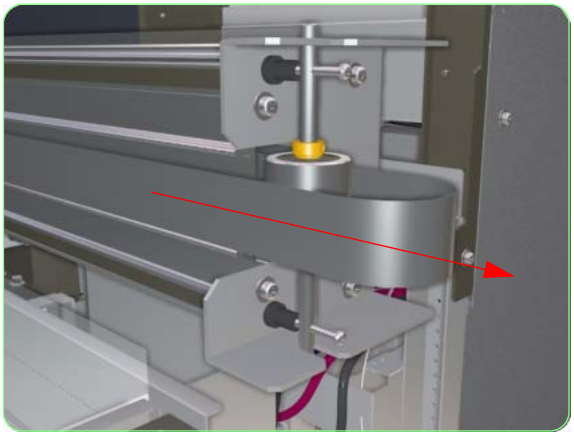
6. Loosen three screws that secure the Scan-Axis Motor Bracket to the Chassis.



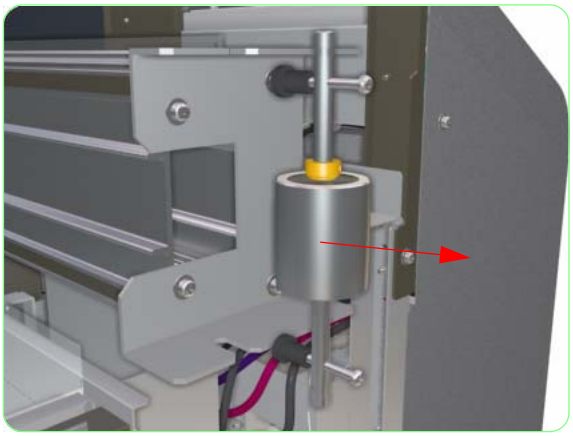
7. Move the Scan-Axis Motor Bracket to the right to release the tension on the Scan-Axis Belt.

8. Release the Scan-Axis Belt and remove the Drive Pulley from the Printer.

9. Remove one screw that secures the Belt to the right side of the Carriage Assembly.



10. Carefully slide the Belt out of the Carriage Assembly and remove from the Printer.



11. Remove the Tension Pulley from the Printer.

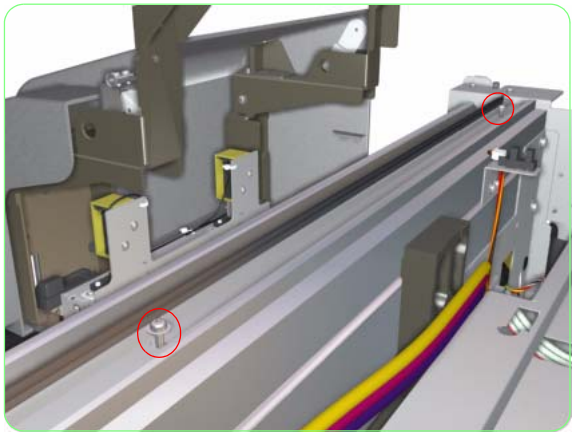
Once the Carriage Drive Assembly has been installed correctly, you must perform the Scan-Axis Belt Tension Adjustment (refer to Page 5-9) and the Belt Tension Adjustment (refer to Page 5-3).

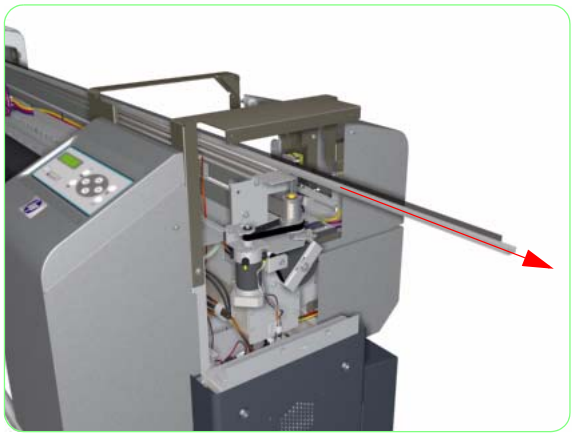
Encoder Strip

Removal

Switch off the product and remove the power cable.

1. Remove the Rear Cover ⇒ Page *8-3*.
2. Remove the Upper Side Cover (Left and Right) ⇒ Page *8-4*.
3. Remove the Top Side Cover (Left and Right) ⇒ Page *8-5*.
4. Remove the Top Cover ⇒ Page *8-6*.
5. Remove seven screws that secure the Encoder Strip to the Chassis.





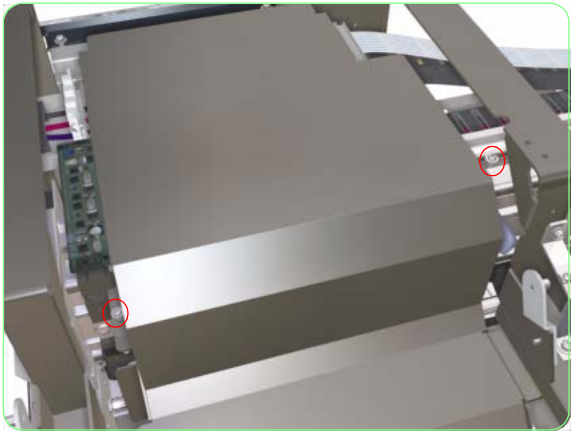
6. Slide the Encoder Strip out of the Printer.

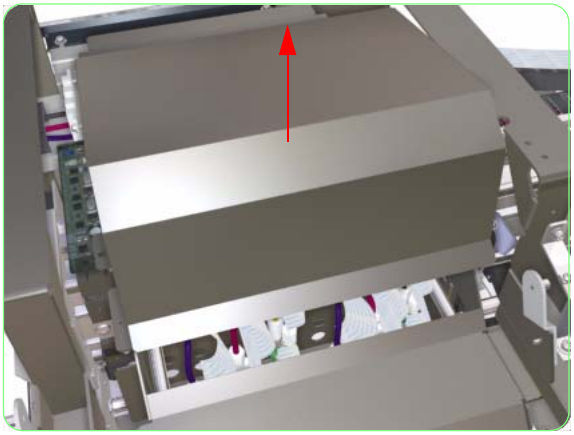
Trailing Cable

Removal

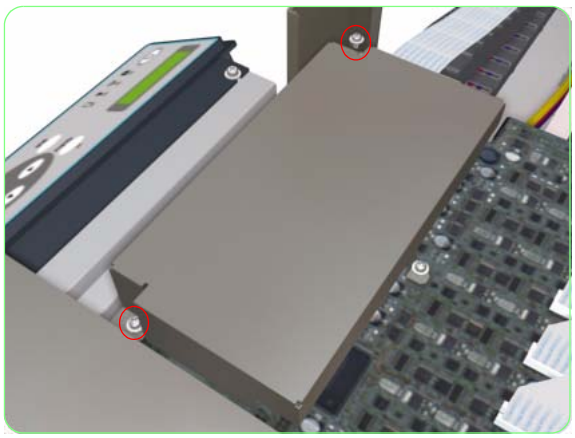
Switch off the product and remove the power cable.

1. Remove the Rear Cover ⇒ Page *8-3*.
2. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
3. Remove the Top Side Cover (Right) ⇒ Page *8-5*.
4. Remove the Top Cover ⇒ Page *8-6*.
5. Remove the Capping Door ⇒ Page *8-15*.
6. Remove the Front Heater ⇒ Page *8-21*.
7. Remove the Front Heater ⇒ Page *8-29*.
8. Remove two screws that secure the Carriage Cover to the Carriage Assembly.

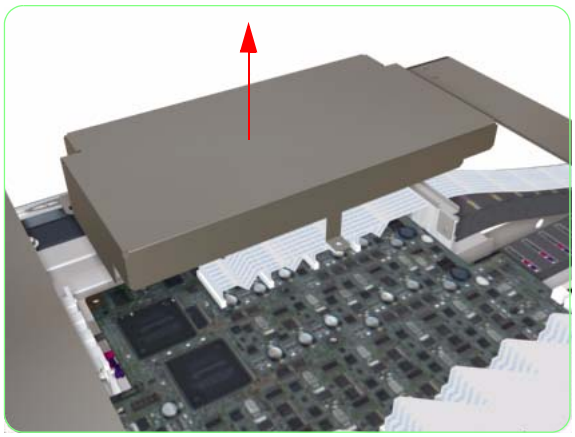




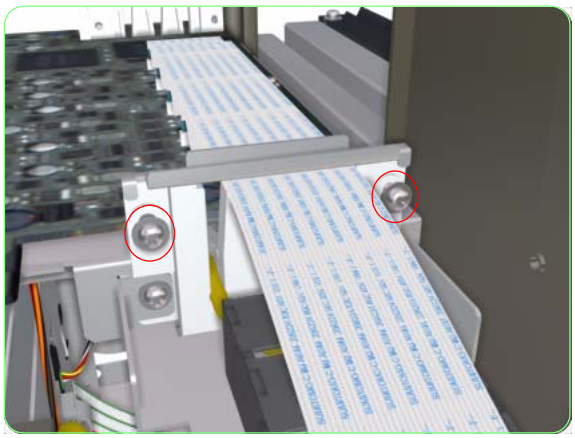
9. Remove the Carriage Cover from the Carriage Assembly.



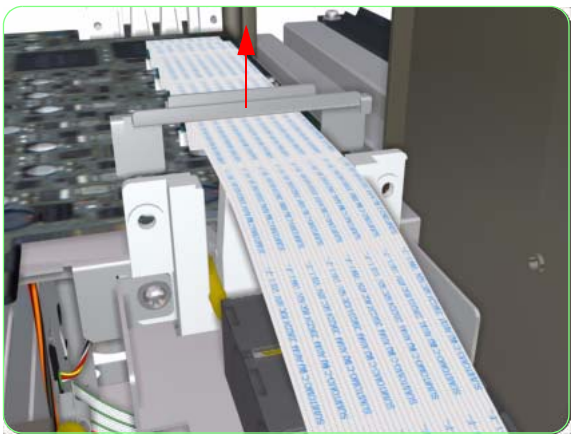
10. Remove two screws that secure the Carriage PCA Cover to the Carriage Assembly.



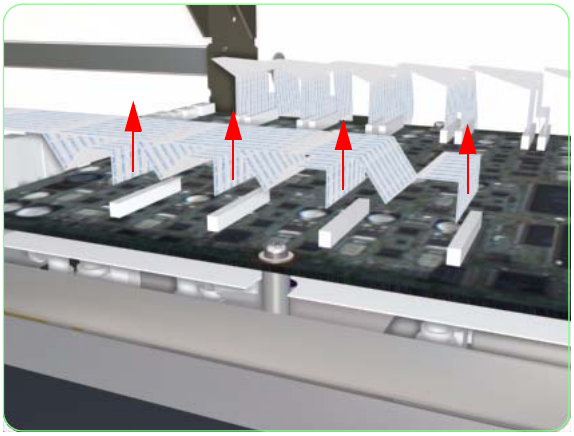
11. Remove the Carriage PCA Cover from the Carriage Assembly.



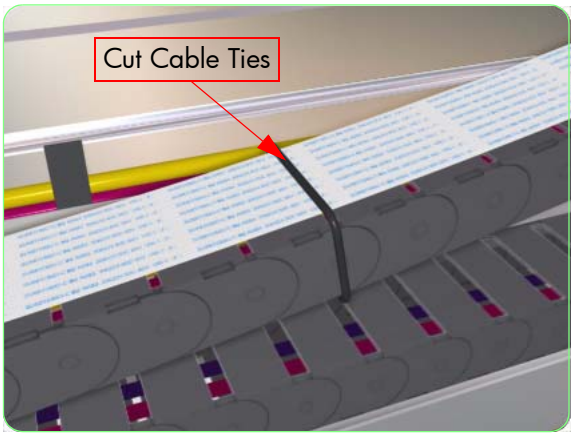
12. Remove two screws that secure the metal bracket to the Carriage Assembly.



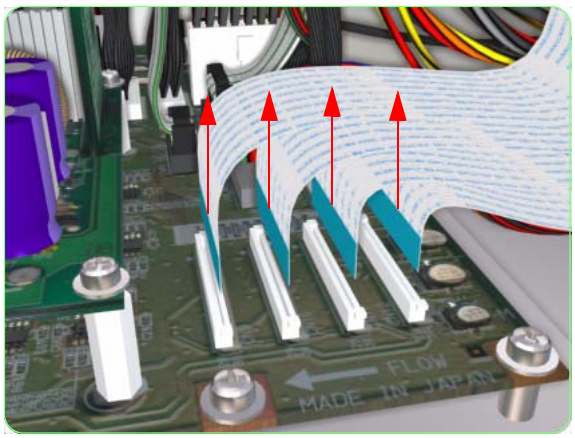
13. Remove the metal bracket from the Carriage Assembly.



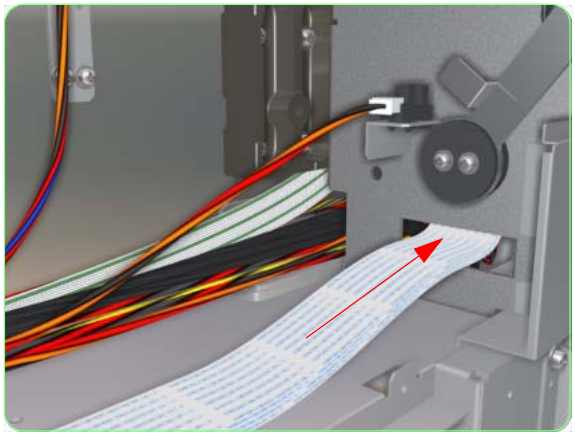
14. Disconnect the Trailing Cable from the Carriage PCA.



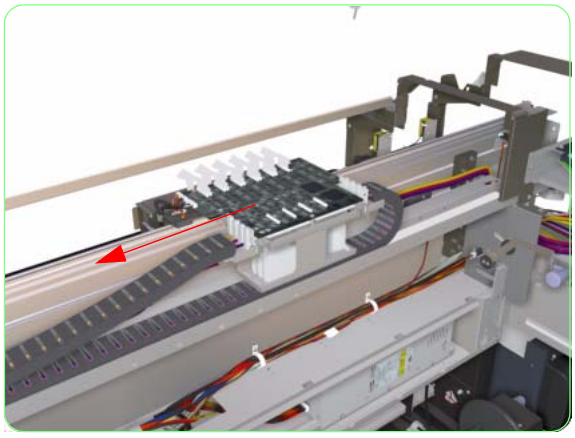
15. Cut ALL cable ties that secure the Trailing Cable to the Ink Tubes.



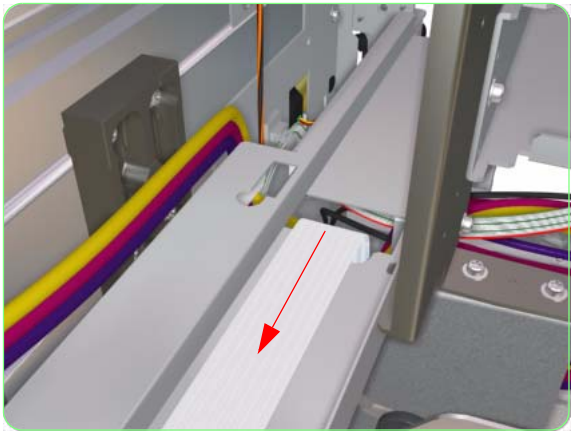
16. Disconnect the Trailing Cable from the Main PCA.



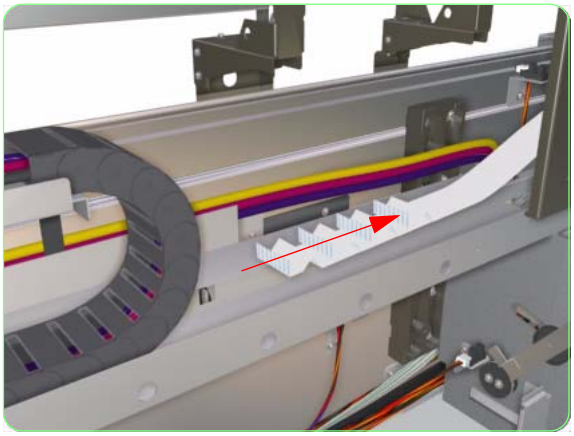
17. Pass the Trailing Cable through the hole (as shown in the drawing).



18. Uncap the Carriage Assembly and move it out of the Capping Station.



19. Pass the Trailing Cable through the hole (as shown in the drawing).



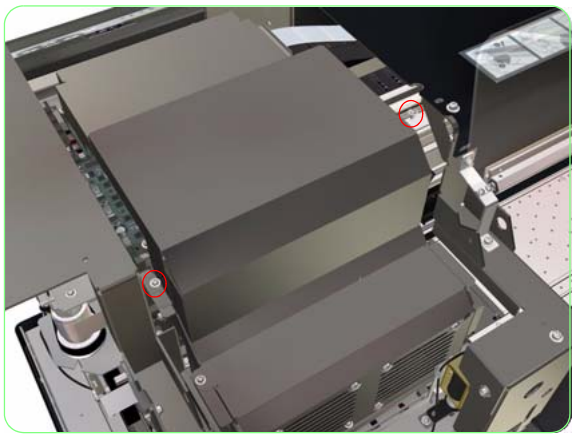
20. Remove the Trailing Cable from the Printer.

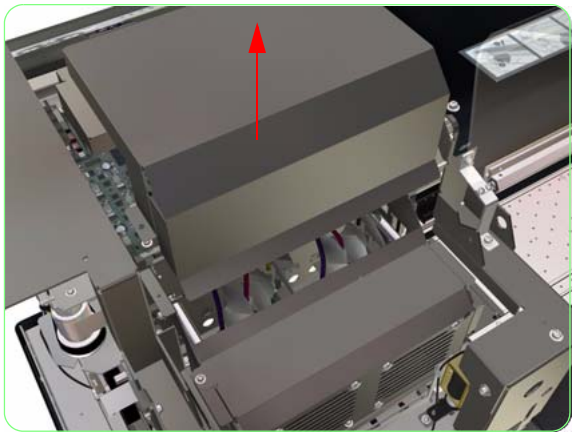
Printhead Cooling Fans

Removal

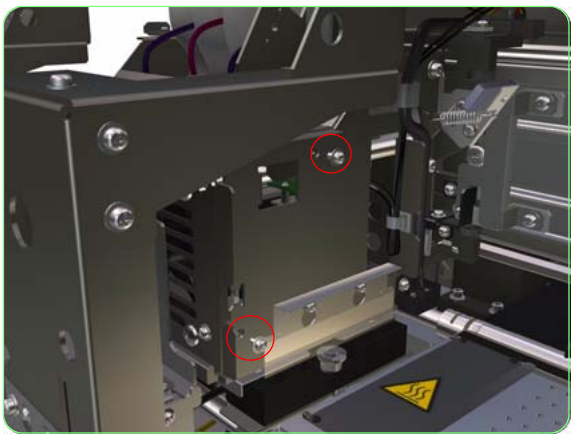
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Right) ⇒ Page *8-5*.
3. Remove the Capping Door ⇒ Page *8-15*.
4. Remove two screws that secure the Carriage Cover to the Carriage Assembly.

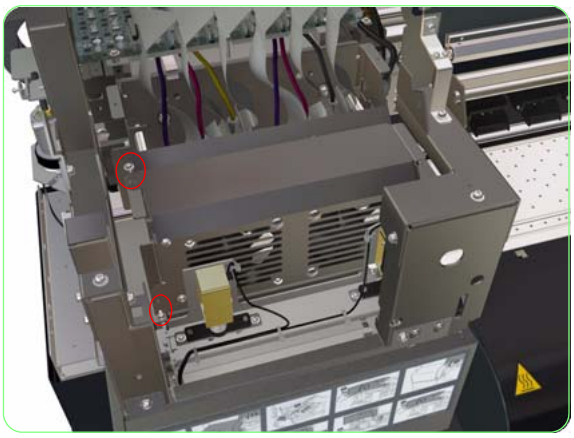




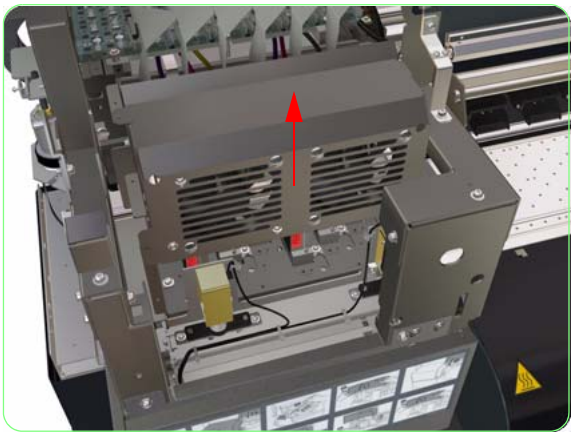
5. Remove the Carriage Cover from the Carriage Assembly.



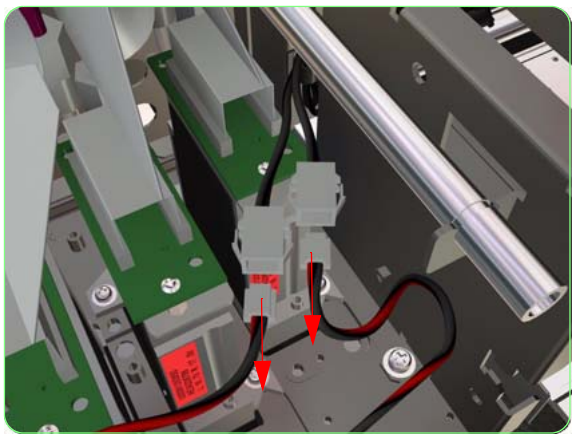
6. Remove two screws that secure the Printhead Cooling Fan Assembly to the Carriage Assembly.



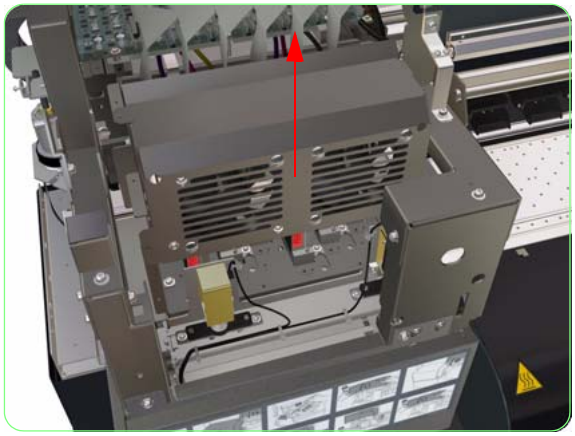
7. Remove two screws that secure the Printhead Cooling Fan Assembly to the Carriage Assembly.



8. Raise the Printhead Cooling Fan Assembly slightly.



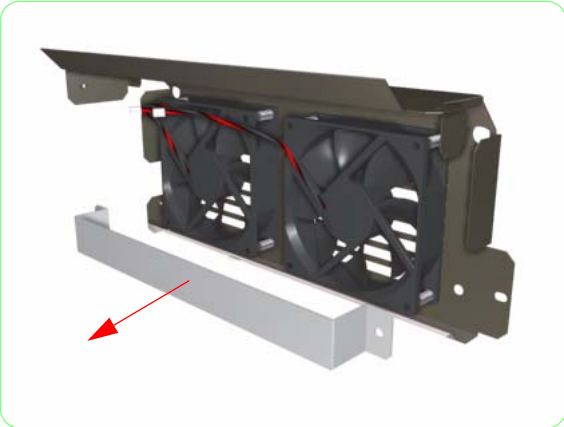
9. Disconnect the cables from the Printhead Cooling Fan Assembly.



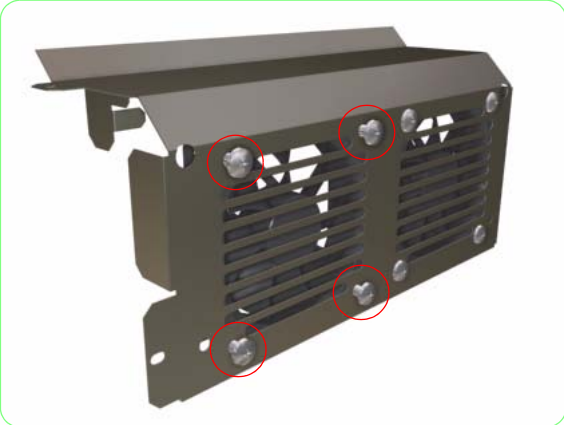
10. Remove the Printhead Cooling Fan Assembly from the Printer.

If one or both of the Printhead Cooling Fans need to be replaced, then continue with the following instructions.

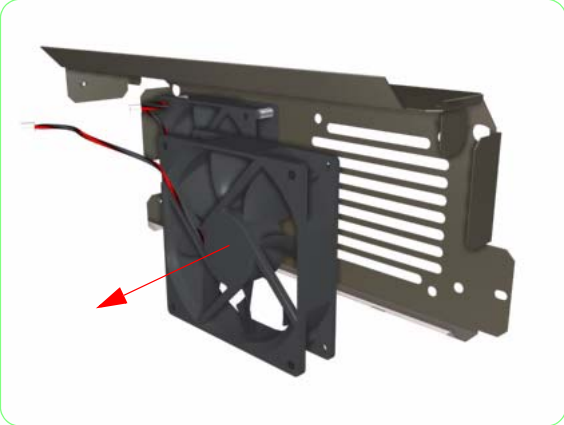
11. Remove two screws that secure the metal bracket to the Printhead Cooling Fan Assembly.



12. Remove the metal bracket from the Printhead Cooling Fan Assembly.



13. Remove four screws that secure the Printhead Cooling Fan to the Printhead Cooling Fan Assembly.



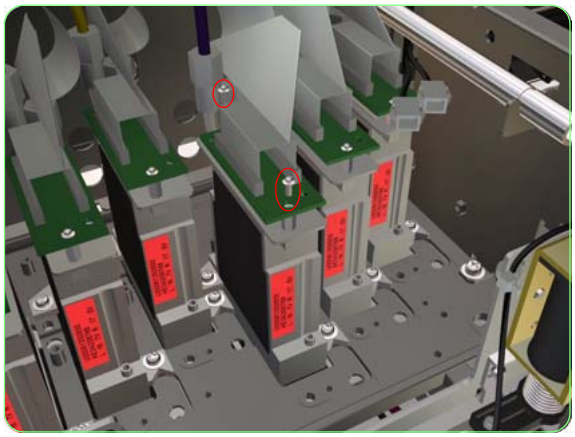
14. Remove the Printhead Cooling Fan from the Printhead Cooling Fan Assembly.

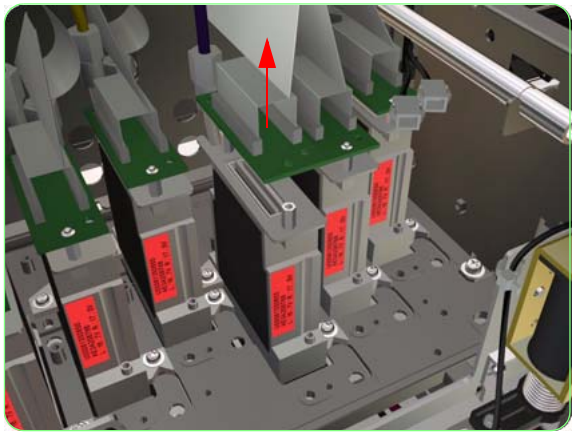
Printhead

Removal

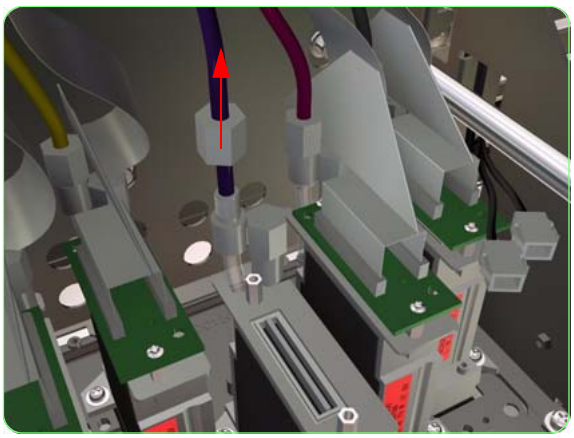
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Right) ⇒ Page *8-5*.
3. Remove the Capping Door ⇒ Page *8-15*.
4. Remove the Printhead Cooling Fan Assembly ⇒ Page *8-82*.
5. Remove two screws that secure the Printhead Connector Assembly to the Printhead.



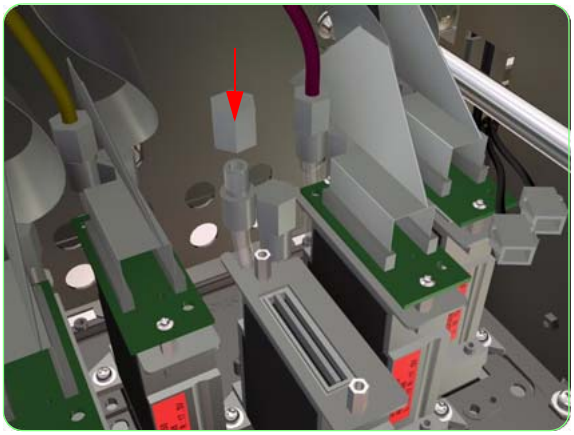


6. Disconnect the Printhead Connector Assembly from the Printhead.

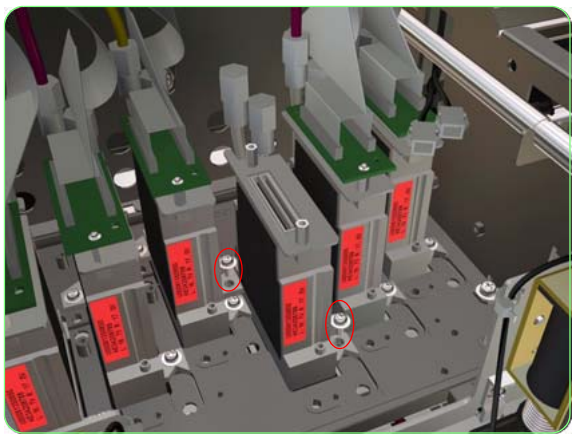


7. Disconnect the Ink Tube from the Printhead.

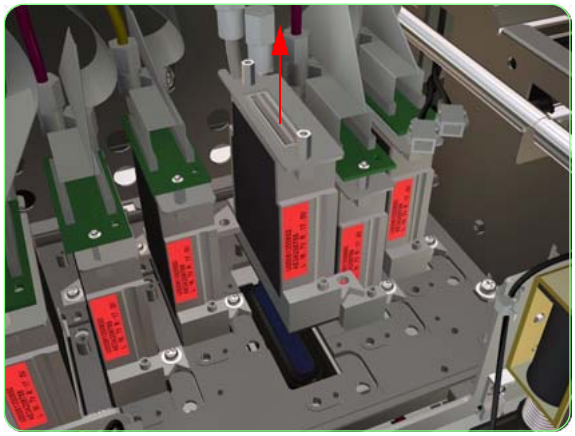
8. Cover the Ink Tube carefully with a paper cloth and secure it to the Carriage Assembly with some tape.



9. Install a Tube Cap on to the Printhead.



10. Remove two screws that secure the Printhead to the Carriage Assembly.



11. Remove the Printhead from the Carriage Assembly.

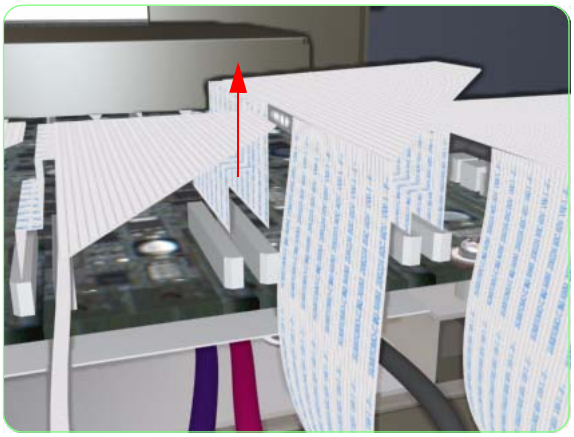
You MUST carefully follow the instructions in Chapter 3 in order to install and adjust the NEW Printhead correctly.

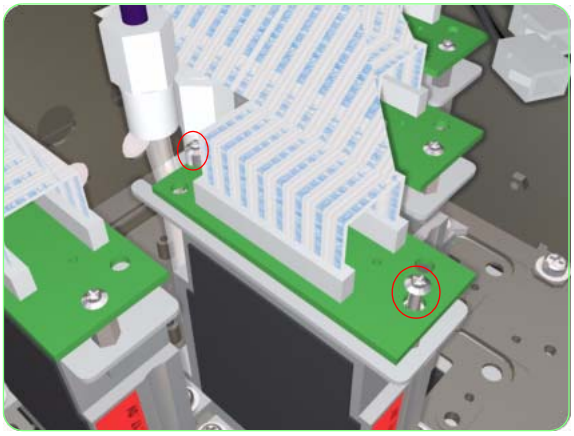
Printhead Connector Assembly

Removal

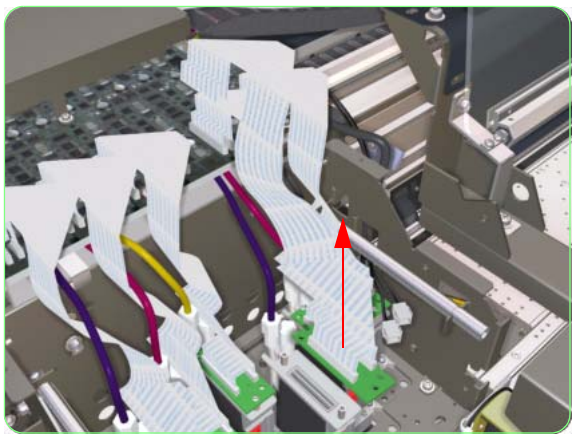
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Right) ⇒ Page *8-5*.
3. Remove the Capping Door ⇒ Page *8-15*.
4. Remove the Printhead Cooling Fan Assembly ⇒ Page *8-82*.
5. Disconnect the Printhead Connector Cable from the Carriage PCA.





6. Remove two screws that secure the Printhead Connector Assembly to the Printhead.



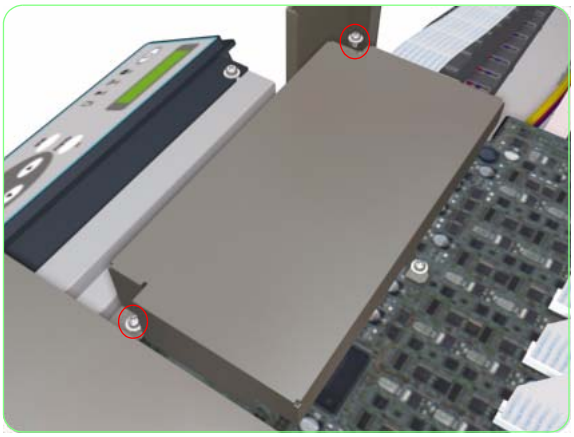
7. Disconnect the Printhead Connector Assembly from the Printhead and remove from the Printer.

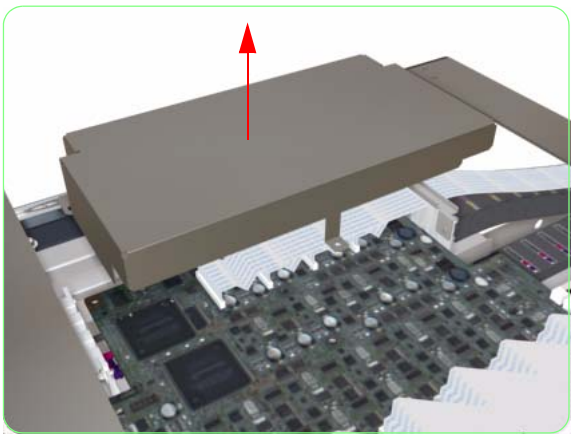
Carriage PCA

Removal

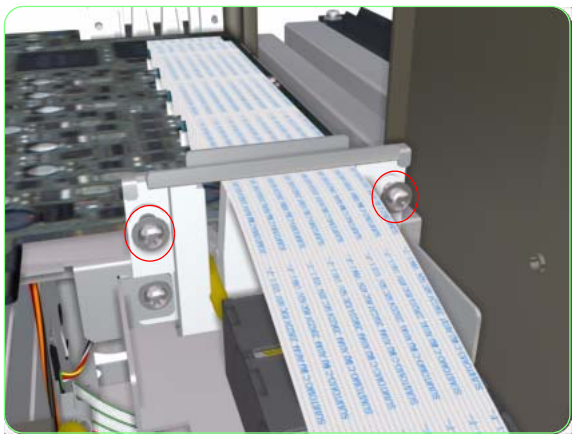
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Right) ⇒ Page *8-5*.
3. Remove the Capping Door ⇒ Page *8-15*.
4. Remove the Printhead Cooling Fan Assembly ⇒ Page *8-82*.
5. Remove two screws that secure the Carriage PCA Cover to the Carriage Assembly.

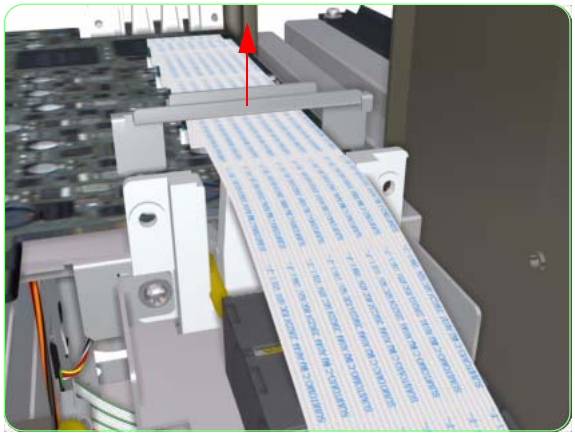




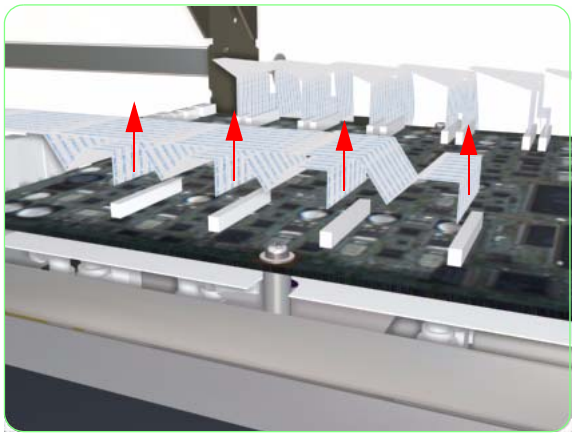
6. Remove the Carriage PCA Cover from the Carriage Assembly.



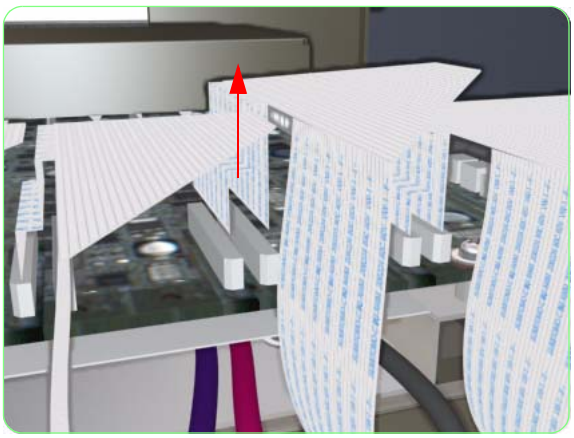
7. Remove two screws that secure the metal bracket to the Carriage Assembly.



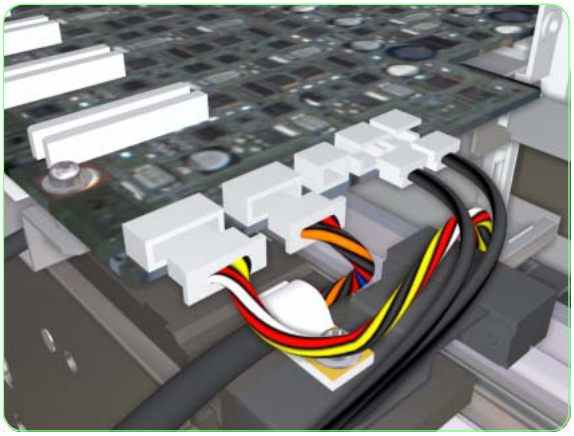
8. Remove the metal bracket from the Carriage Assembly.



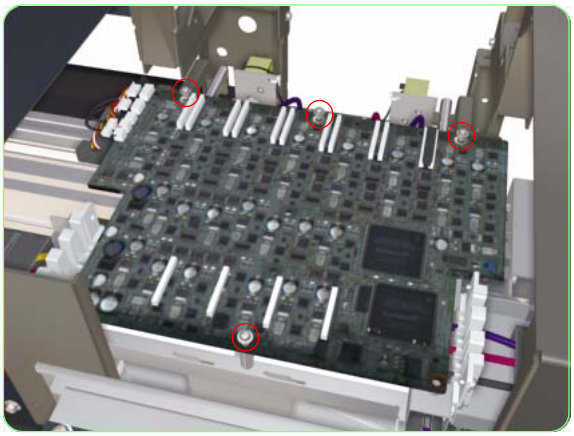
9. Disconnect the Trailing Cable from the Carriage PCA.



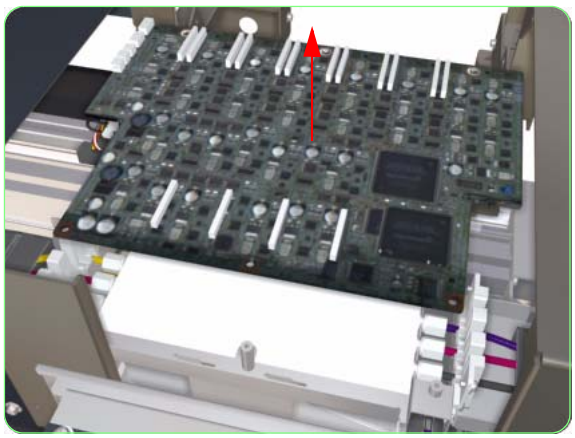
10. Disconnect ALL the Printhead Connector Cables from the Carriage PCA.



11. Disconnect ALL cables from the Carriage PCA.



12. Remove four screws that secure the Carriage PCA to the Carriage Assembly.



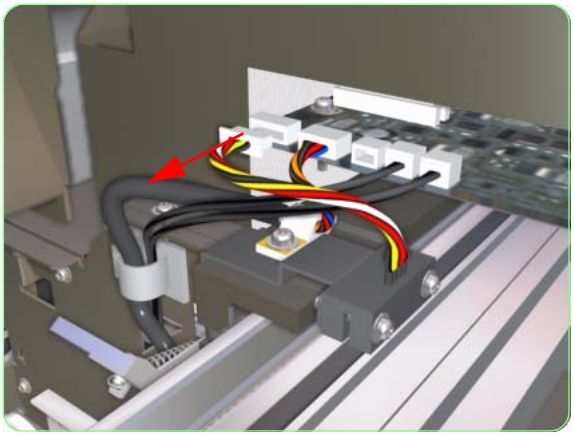
13. Remove the Carriage PCA from the Printer.

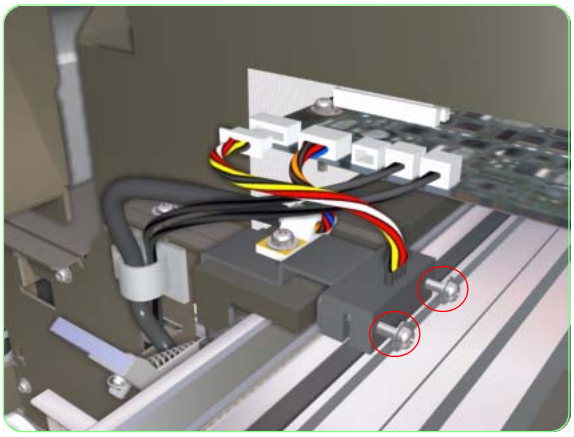
Encoder Sensor

Removal

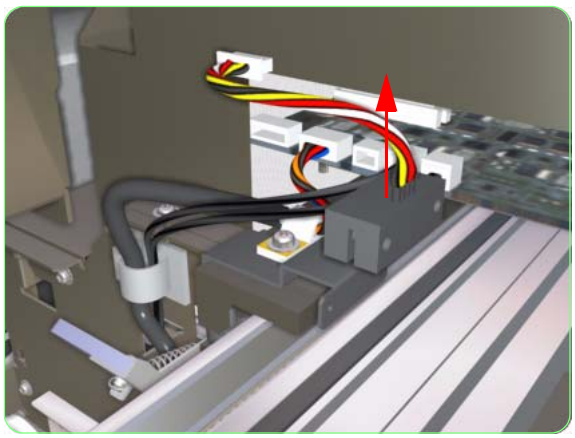
Switch off the product and remove the power cable.

1. Remove the Rear Cover ⇒ Page *8-3*.
2. Remove the Upper Side Cover (Left and Right) ⇒ Page *8-4*.
3. Remove the Top Side Cover (left and Right) ⇒ Page *8-5*.
4. Remove the Top Cover ⇒ Page *8-6*.
5. Disconnect the Encoder Sensor Cable from the Carriage PCA.





6. Remove two screws that secure the Encoder Sensor.

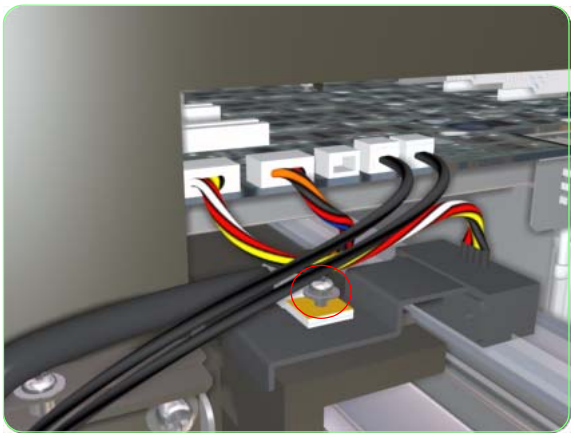


7. Remove the Encoder Sensor from the Printer.

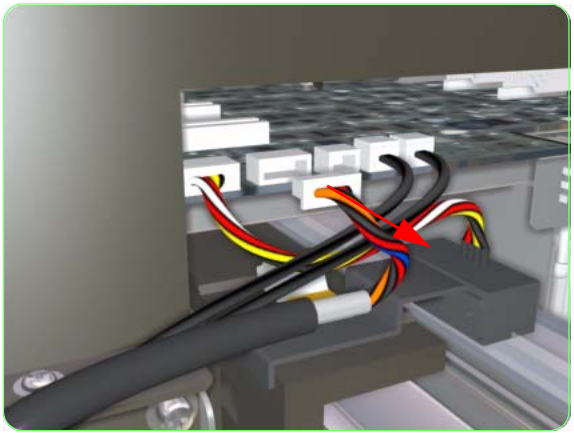
Line Sensor

Removal

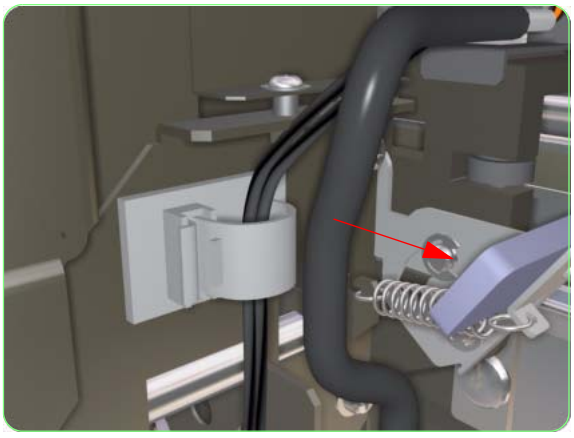
Switch off the product and remove the power cable.



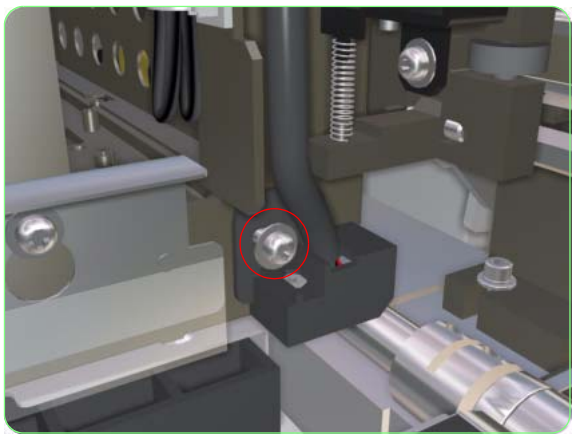
1. Open the Rear Cover.
2. Remove one screw that secures the Line Sensor Cable clip.



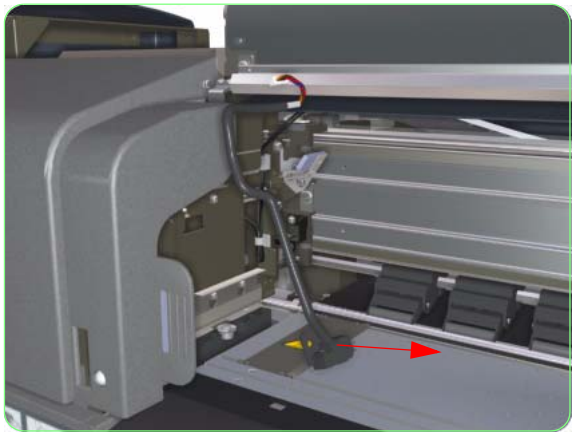
3. Disconnect the Line Sensor Cable from the Carriage PCA.



4. Release the Line Sensor Cable from the cable clip.



5. Remove one screw that secures the Line Sensor to the Carriage PCA.

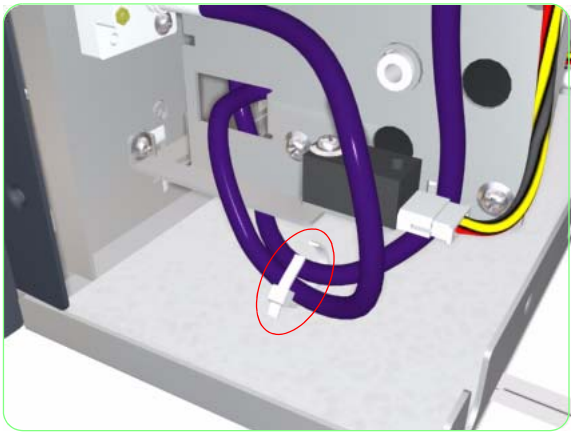


6. Remove the Line Sensor from the Printer.

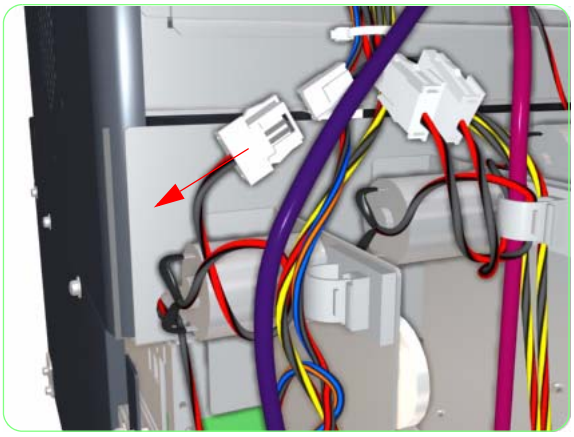
Ink Pump Assembly

Removal

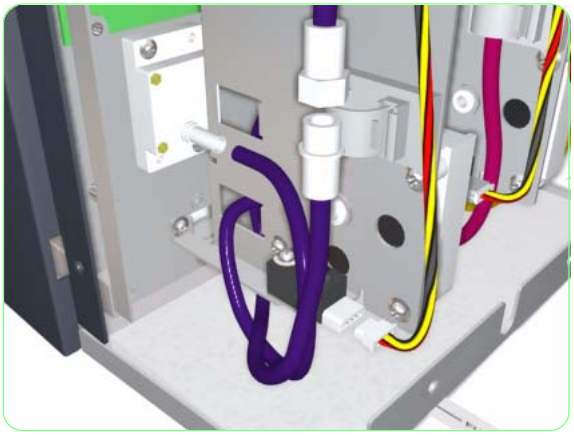
1. Purge the Ink from the Printer ⇒ Page *4-25*. Once the ink has been purged, switch Off the Printer.
2. Remove the Rear Ink Cartridge Cover (Left or Right) ⇒ Page *8-20*.



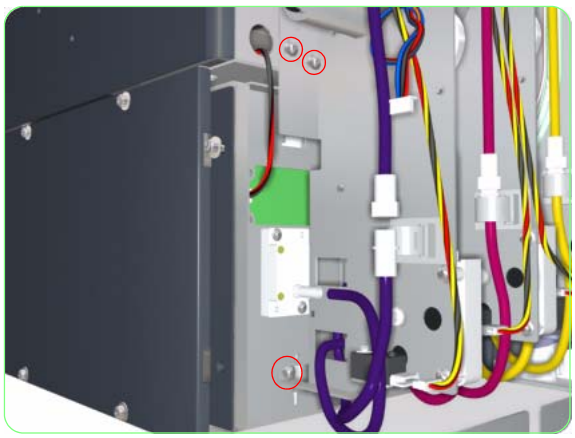
3. Cut the cable tie that secures the Ink Pump Tube.



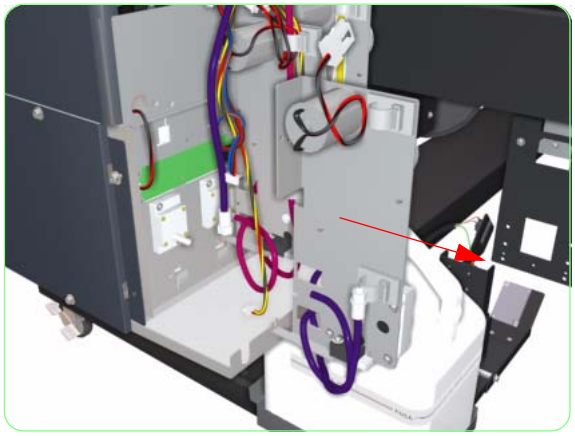
4. Disconnect the Ink Pump Assembly cable.



5. Carefully disconnect the Ink Pump Tube from both sides.



6. Remove three screws that secure the Ink Pump Assembly to the Printer.



7. Remove the Ink Pump Assembly from the Printer.

Once the new Ink Pump Assembly has been installed, you will need to switch On the Printer and charge the Ink (for more information, refer to Page *4-23*).

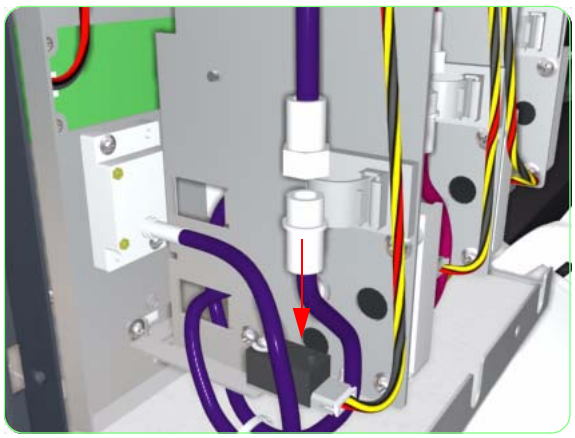
Once you have replaced the Ink Pump Assembly, make sure you reset the Pump Tube counter (for more information, refer to Page *4-81*).

Ink Supply Station (Left or Right)

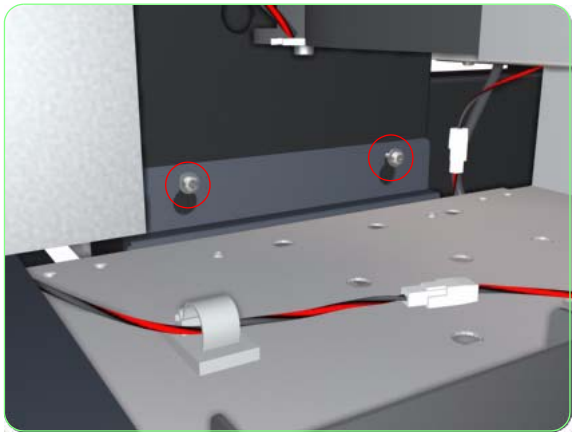
Removal

1. Purge the Ink from the Printer ⇒ Page *4-25*. Once the ink has been purged, switch Off the Printer.
2. Remove the Lower Side Cover (Left or Right) ⇒ Page *8-8*.
3. Remove the Rear Ink Cartridge Cover (Left or Right) ⇒ Page *8-20*.
4. Disconnect the Ink Supply Station cables.

5. Remove the Ink Pump Tubes (for ALL three colors) from the cable clip.

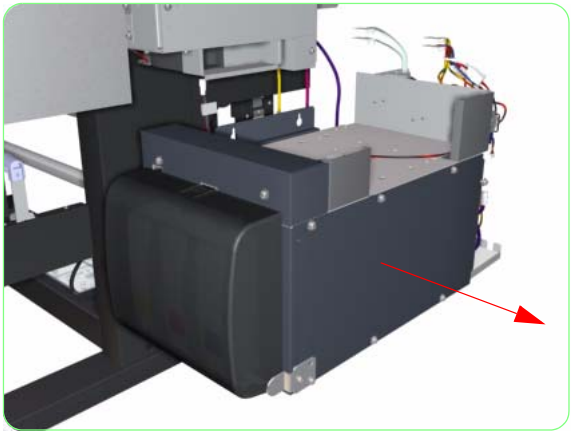


6. Carefully disconnect the Ink Pump Tube (for ALL three colors) from the top side.



7. Loosen two screw that secure the Ink Supply Station to the Printer.

8. Remove two screws that secure the Ink Supply Station to the Printer.



9. Remove the Ink Supply Station from the Printer.

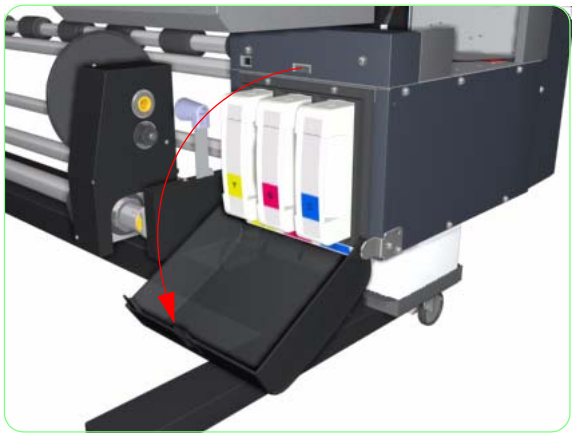
Once the new Ink Supply Station has been installed, you will need to switch On the Printer and charge the Ink (for more information, refer to Page *4-23*).

IC Door Sensor (Left or Right)

Removal

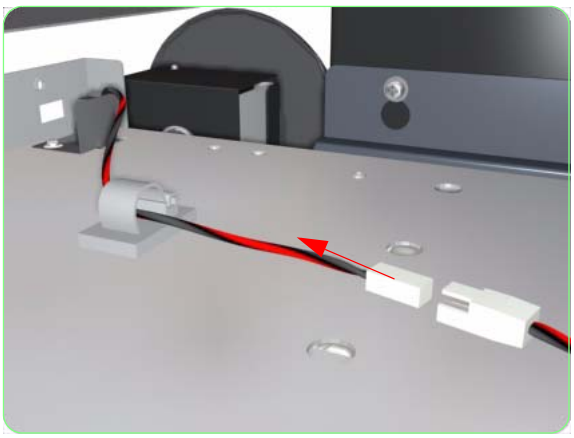
Switch off the product and remove the power cable.

1. Remove the Lower Side Cover (Left or Right) ⇒ Page *8-8*.
2. Open the Ink Cartridge Door.

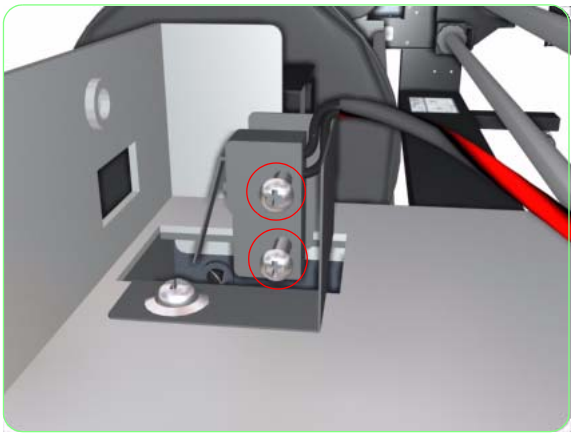


3. Remove two screws that secure the metal cover to the Ink Supply Station.

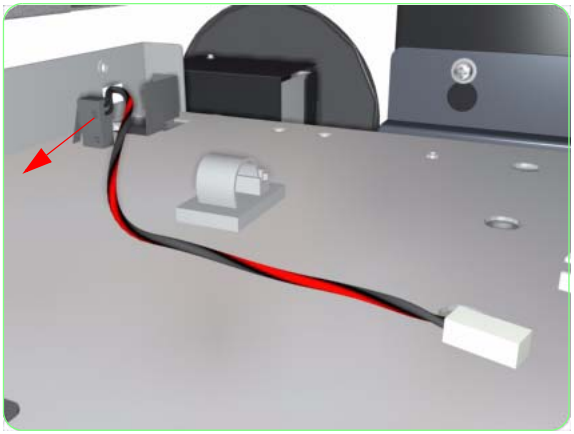
4. Remove the metal cover from the Ink Supply Station.



5. Disconnect the IC Door Sensor cable.



6. Remove two screws that secure the IC Door Sensor to the Ink Supply Station.



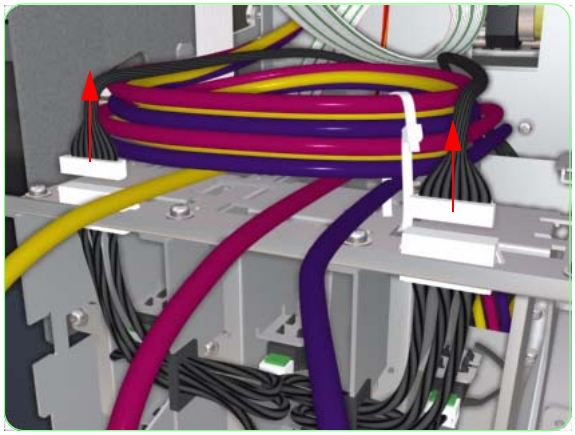
7. Remove the IC Door Sensor from the Ink Supply Station.

Subtank Sensors

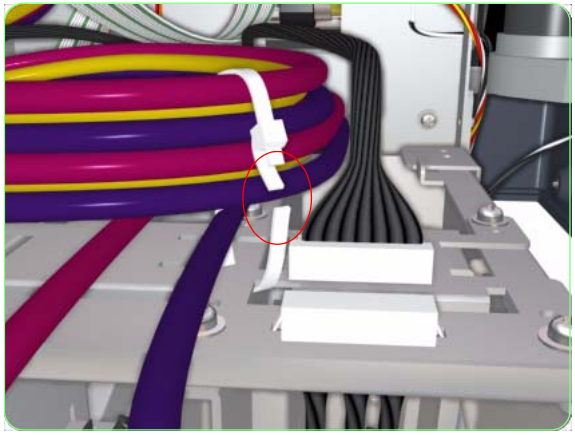
Removal

Switch off the product and remove the power cable.

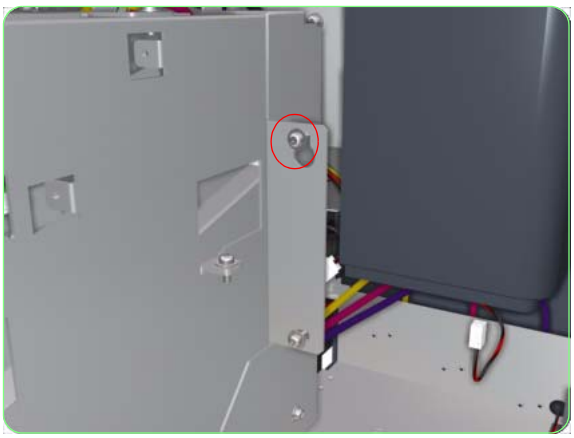
1. Remove the Upper Side Cover (Left or Right) ⇒ Page *8-4*.
2. Remove the Lower Side Cover (Left or Right) ⇒ Page *8-8*.
3. Remove the Left Subtank Side Cover ⇒ Page *8-9* or the Right Subtank Cover ⇒ Page *8-11*.



4. Disconnect the Subtank Station cables.

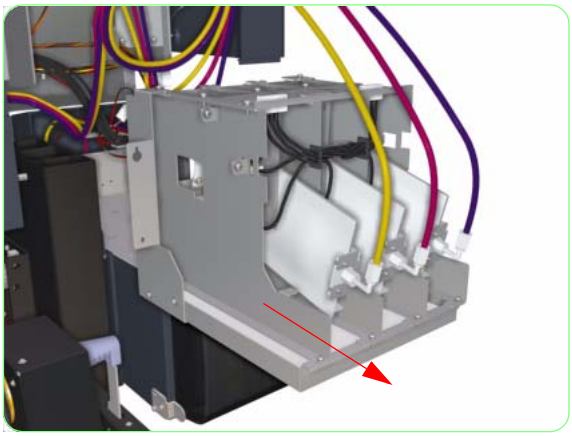


5. Cut the cable tie that secures the Ink Tubes.

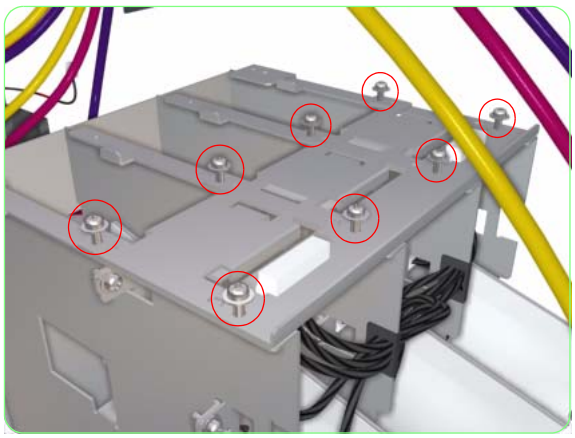


6. Loosen one screw from each side of the Subtank Station.

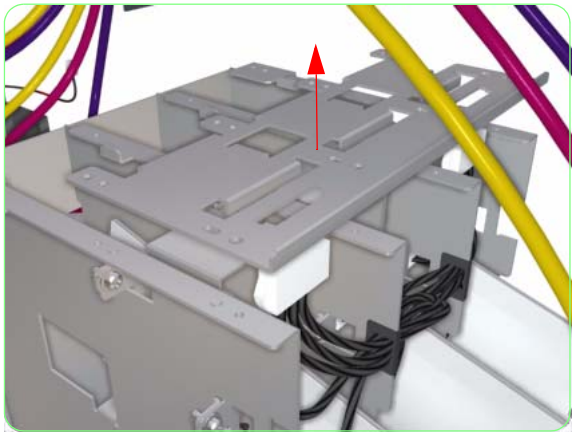
7. Remove one screw from each side of the Subtank Station.



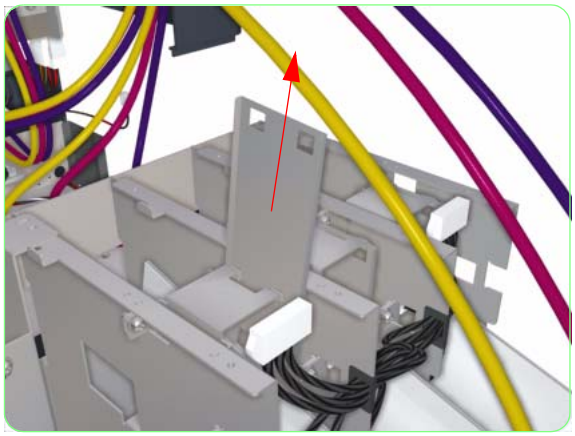
8. Carefully pull out the Subtank Station slightly.



9. Remove eight screws that secure the metal plate to the Subtank Station.

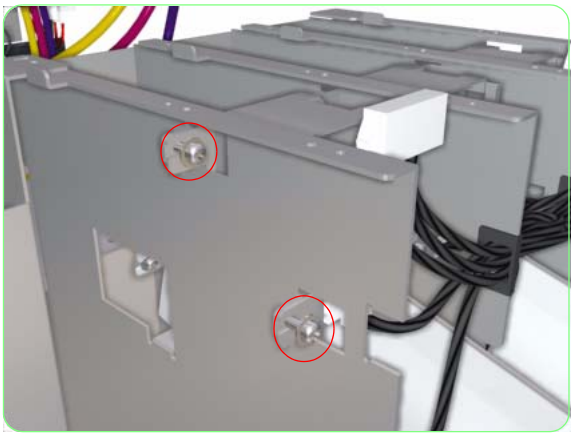


10. Remove the metal plate from the Subtank Station.

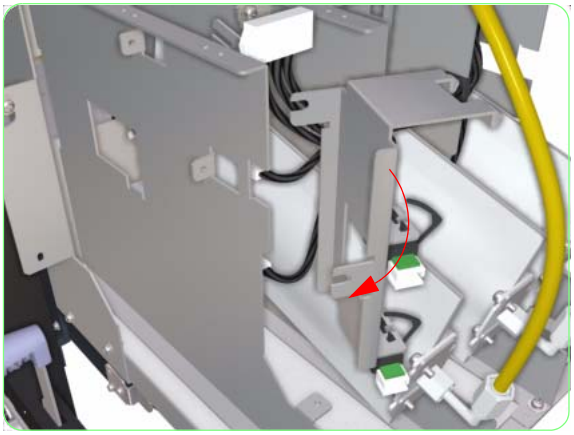


11. Remove the Sensor Plate from the Subtank Station.

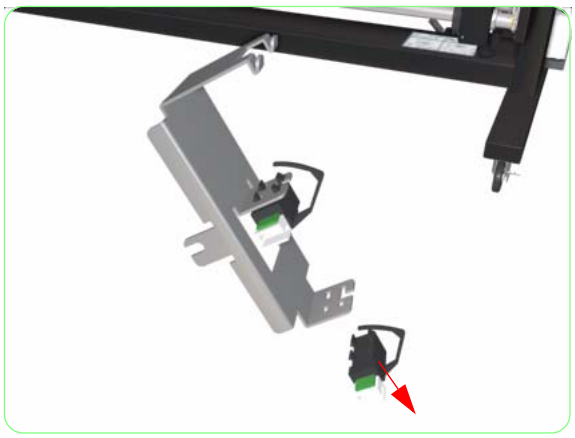
12. Disconnect the Subtank Sensor cables.



13. Remove two screws that secure the Subtank Sensors Assembly to the Subtank Station.



14. Remove the Subtank Sensors Assembly from the Subtank Station.



15. Unclip the Sensors from the Subtank Sensors Assembly.

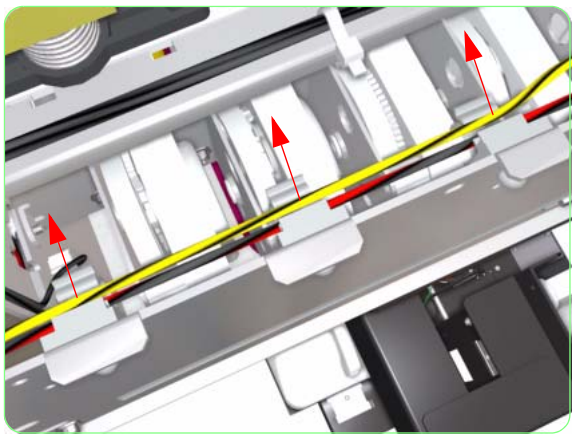
Capping Station Assembly

Removal

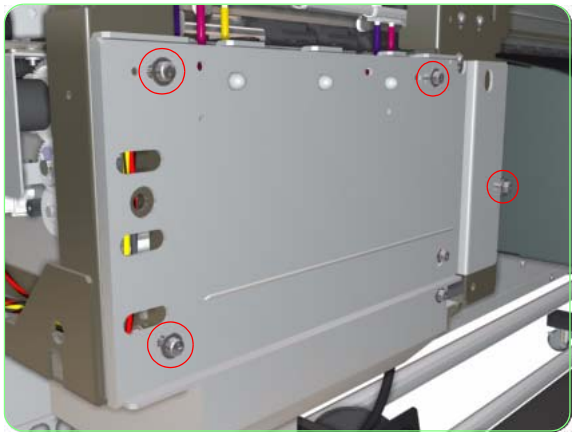
Switch off the product and remove the power cable.

1. Uncap the Carriage and move it to the Wiping Station.
2. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
3. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
4. Remove the Top Side Cover (Right) ⇒ Page *8-5*.
5. Remove the Lower Side Cover (Right) ⇒ Page *8-8*.
6. Remove the Lower Capping Cover ⇒ Page *8-13*.
7. Remove the Capping Door ⇒ Page *8-15*.
8. Remove two screws that secure the metal bracket to the chassis (on the Capping Side).

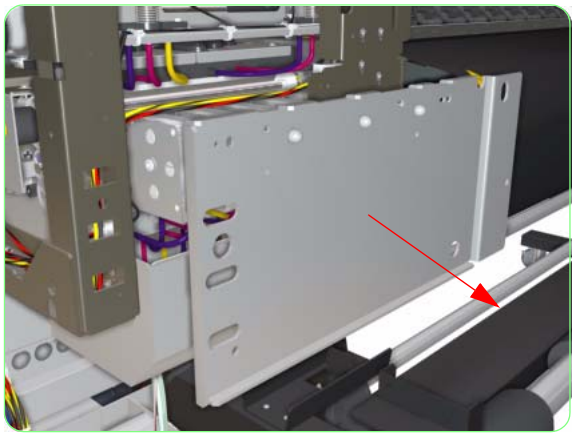
9. Remove the metal bracket from the Printer.



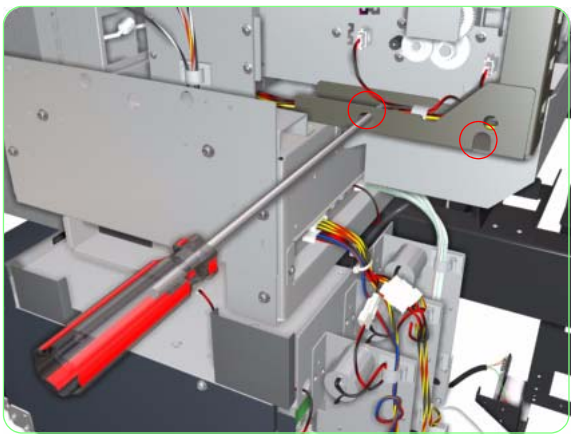
10. Release ALL the cables from the cable clips.



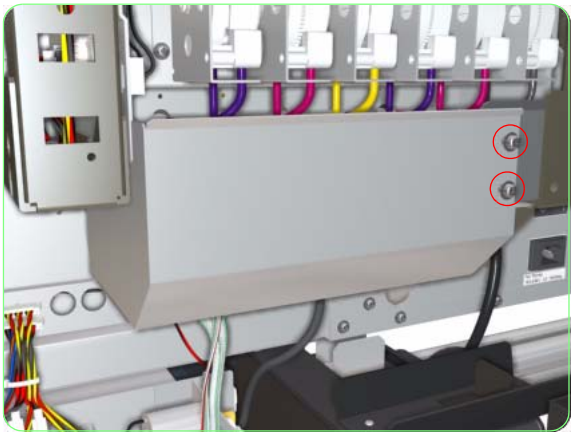
11. Remove four screws that secure the metal plate to the chassis.



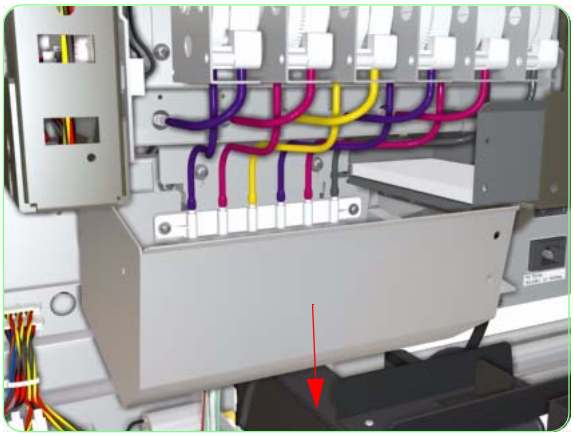
12. Remove the metal plate from the chassis.



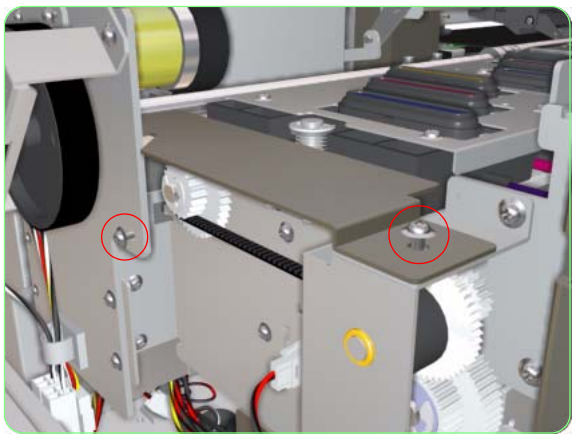
13. Remove two screws that secure the metal cover to the side of the Printer.



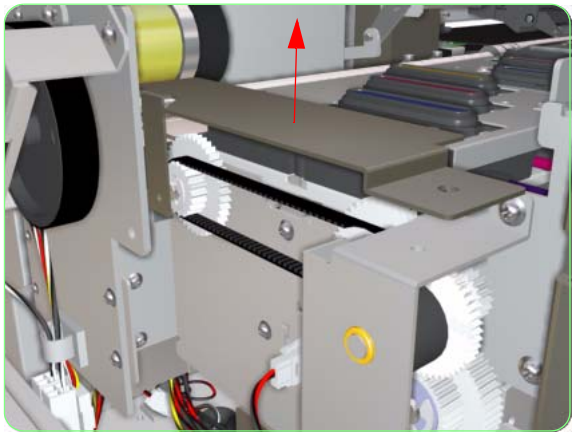
14. Remove two screws that secure the metal cover to the front of the Printer.



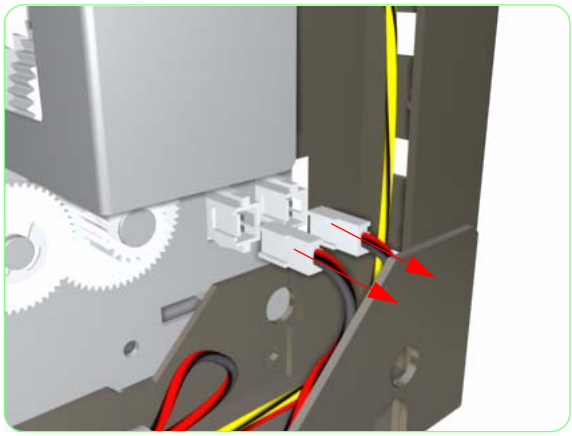
15. Pull the metal cover down slightly so that the Priming Tubes are exposed.



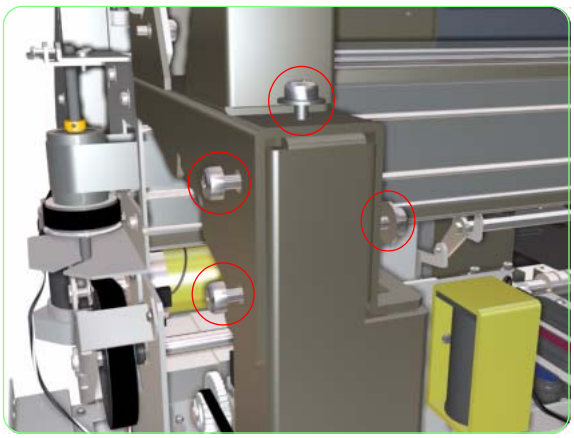
16. Remove two screws that secure the metal bracket to the Capping Station.



17. Remove the metal bracket from the Capping Station.



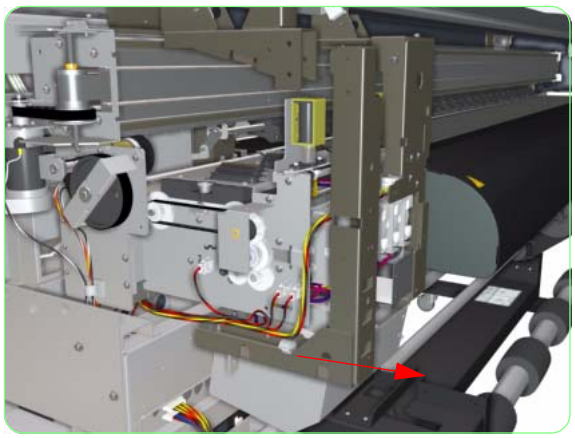
18. Disconnect the Capping Station cables.



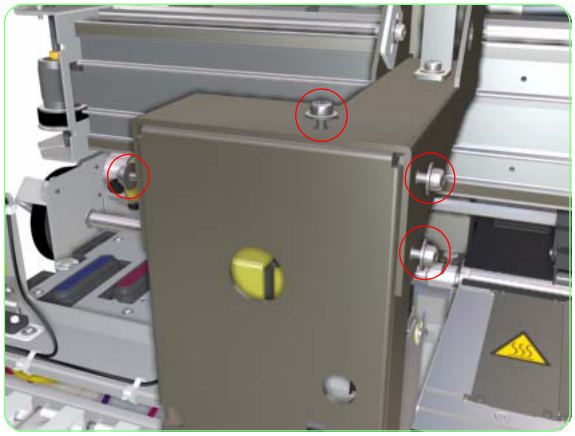
19. Remove four screws that secure the Left Capping Frame at the top.

20. Remove two screws that secure the Left Capping Frame to the bottom.

21. Remove one screw that secures the metal bracket.



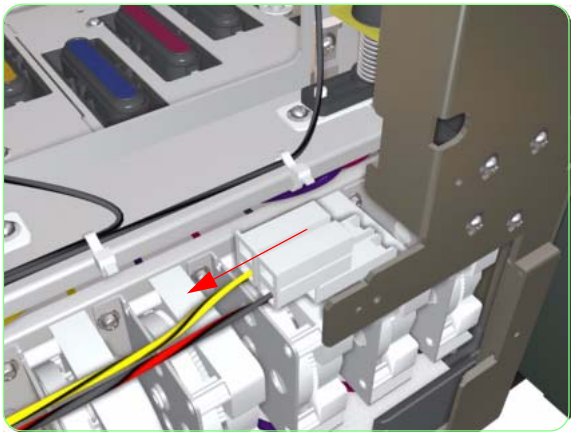
22. Remove the Left Capping Frame from the Printer.



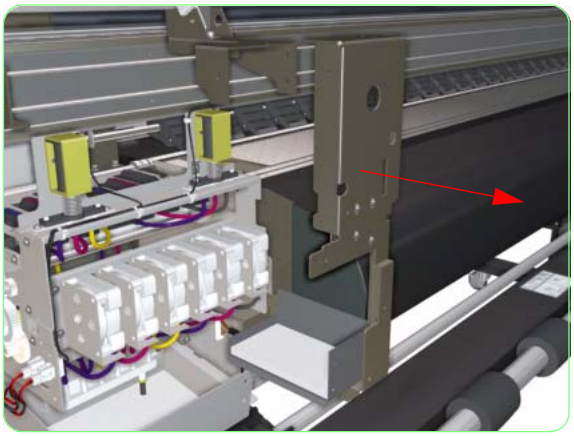
23. Remove four screws that secure the Right Capping Frame at the top.

24. Remove two screws that secure the Right Capping Frame to the bottom.

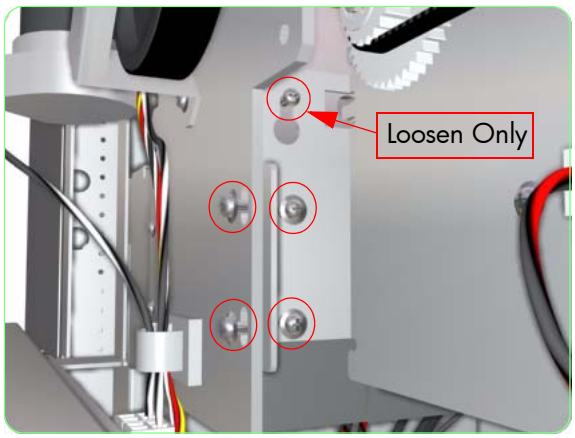
25. Remove one screw that secures the metal bracket.



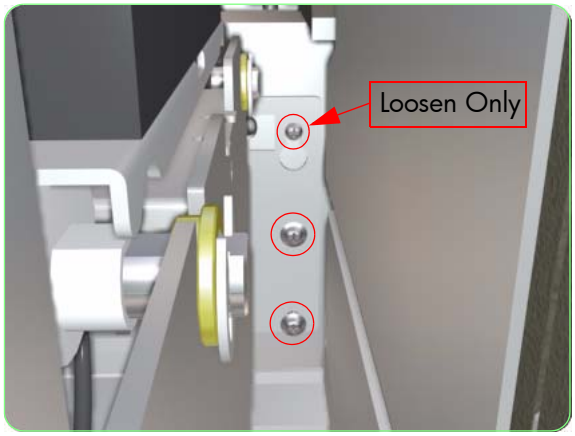
26. Disconnect the Cable from the Right Rear Cover Sensor.



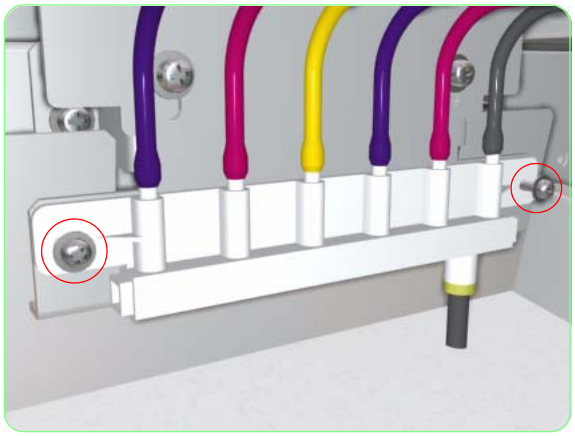
27. Remove the Right Capping Frame from the Printer.



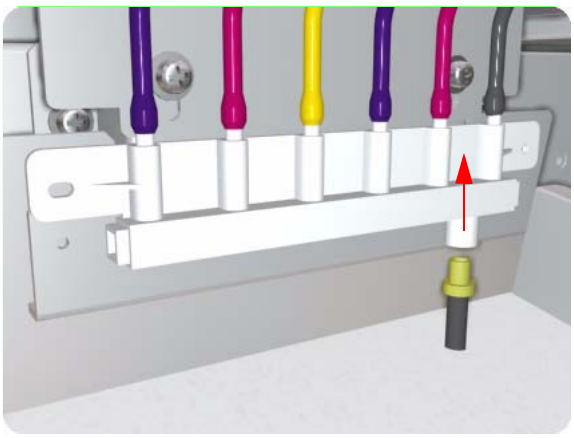
28. Loosen one screw (from the top) and four screws that secure the Capping Station.



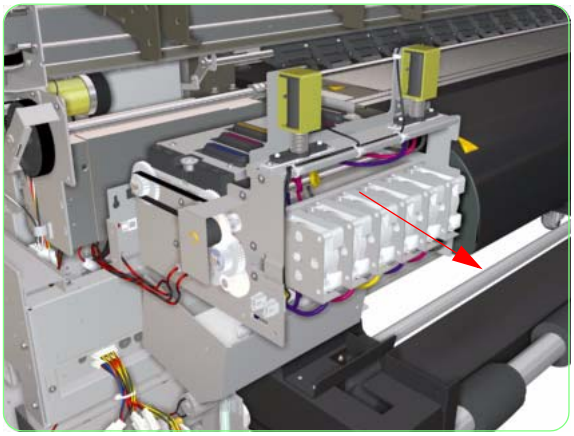
29. Loosen one screw (from the top) and two screws that secure the Capping Station.



30. Remove two screws that secure the Capping Tubes Bracket to the Capping Station.



31. Disconnect the Waste Tube to the Capping Tubes Bracket.



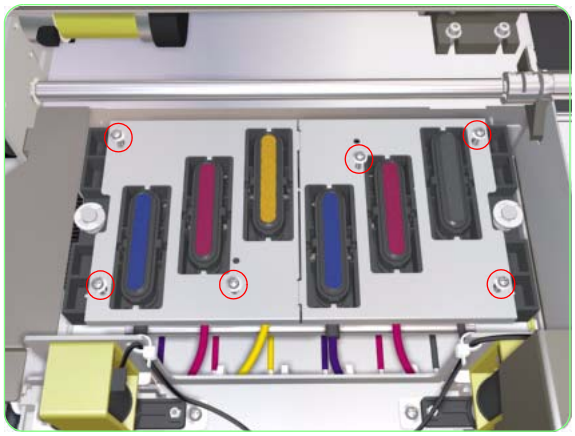
32. Remove the Capping Station from the Printer.

Capping Unit

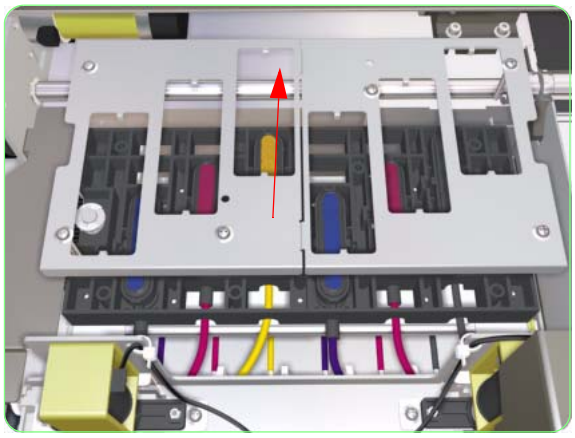
Removal

Switch off the product and remove the power cable.

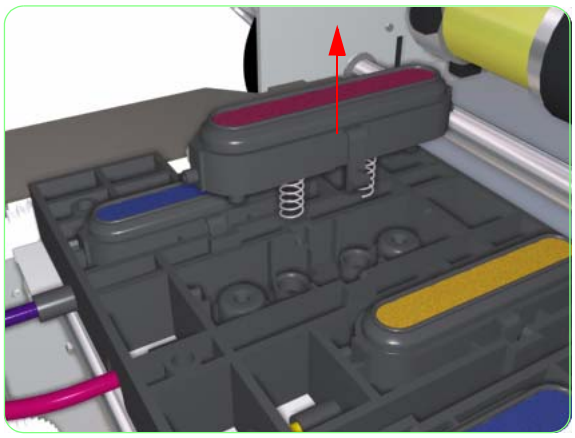
1. Uncap the Carriage and move it to the Wiping Station.
2. Remove the Capping Door ⇒ Page *8-15*.
3. Remove six screws that secure the Capping Plates to the Capping Station.



4. Remove the Capping Plates from the Capping Station.



5. Release the Capping Unit and remove from the Capping Station.



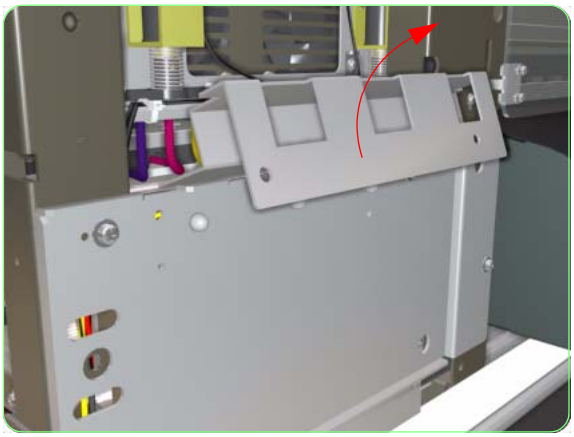
Once you have replaced the Capping Unit, make sure you reset the Capping Unit counter (for more information, refer to Page *4-84*).

Prime Assembly

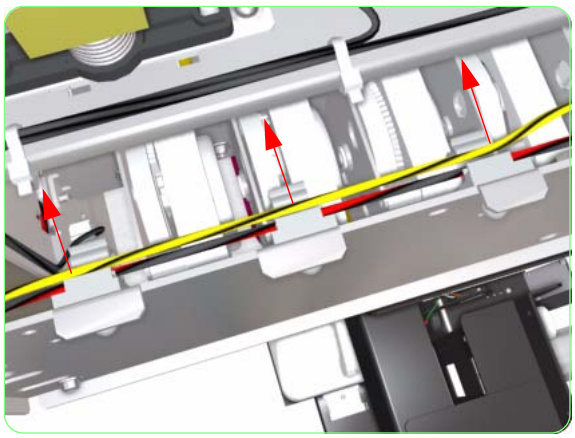
Removal

Switch off the product and remove the power cable.

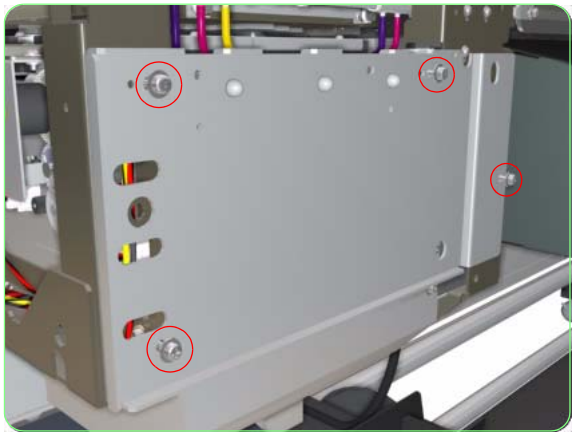
1. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Right) ⇒ Page *8-5*.
3. Remove the Lower Side Cover (Right) ⇒ Page *8-8*.
4. Remove the Lower Capping Cover ⇒ Page *8-13*.
5. Remove the Capping Door ⇒ Page *8-15*.
6. Remove two screws that secure the metal bracket to the chassis (on the Capping Side).



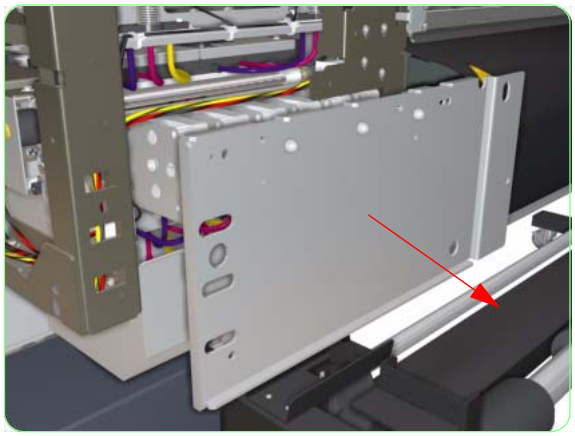
7. Remove the metal bracket from the Printer.



8. Release ALL the cables from the cable clips.

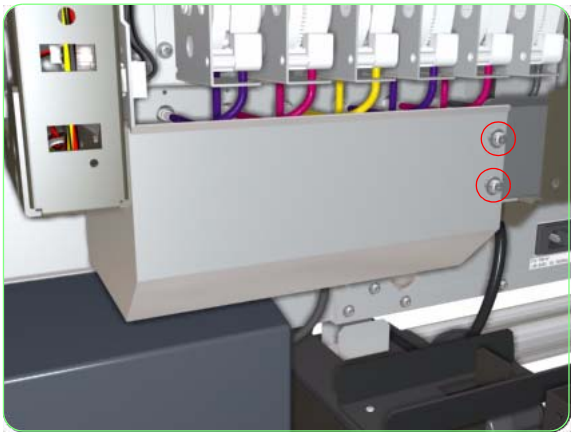


9. Remove four screws that secure the metal plate to the chassis.

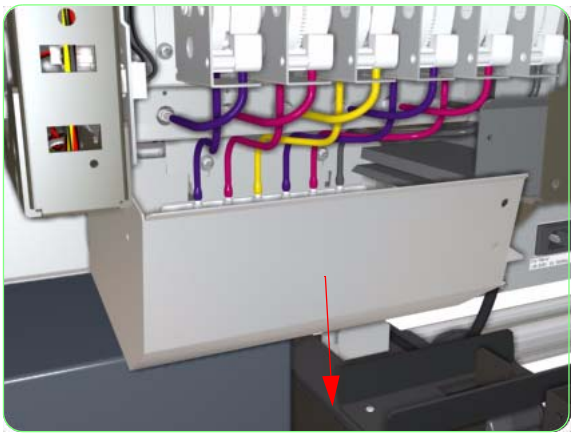


10. Remove the metal plate from the chassis.

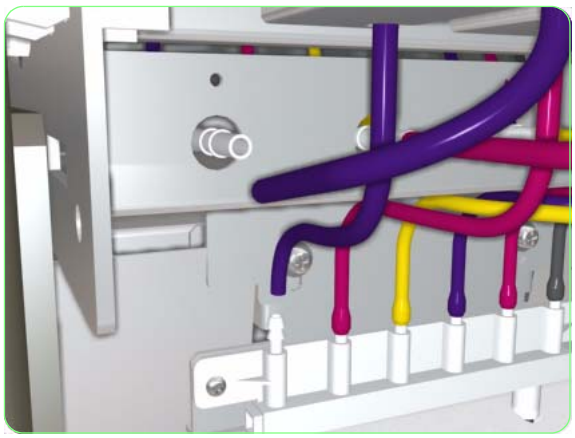
11. Remove two screws that secure the metal cover to the side of the Printer.



12. Remove two screws that secure the metal cover to the front of the Printer.

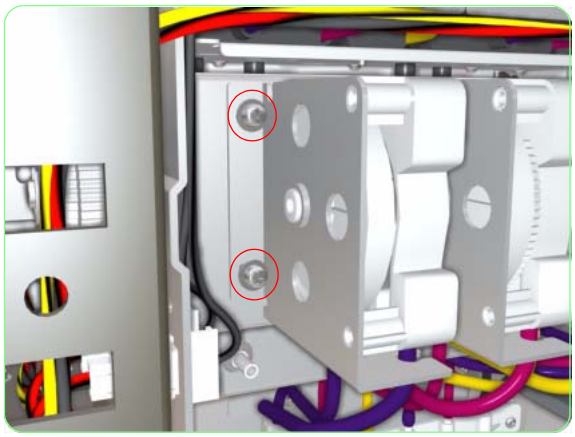


13. Pull the metal cover down slightly so that the Priming Tubes are exposed.

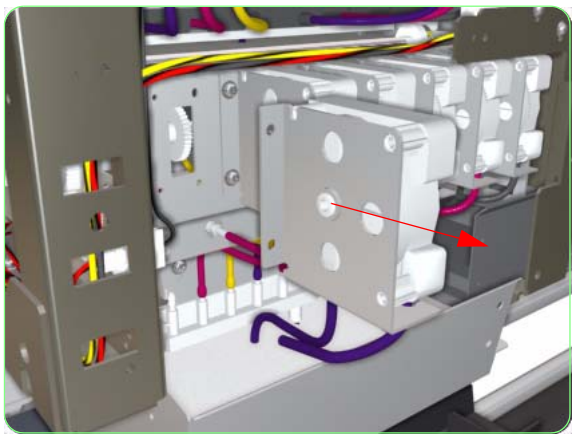


14. Disconnect the Priming Tube from both ends.

Be very careful when disconnecting the Priming Tubes since waste ink may leak from them. Place a cloth underneath the tubes before disconnecting them and cover the end of the tubes with a clean cloth.



15. Remove two screws that secure the Prime Assembly to the Capping Station.



16. Remove the Prime Assembly from the Capping Station.

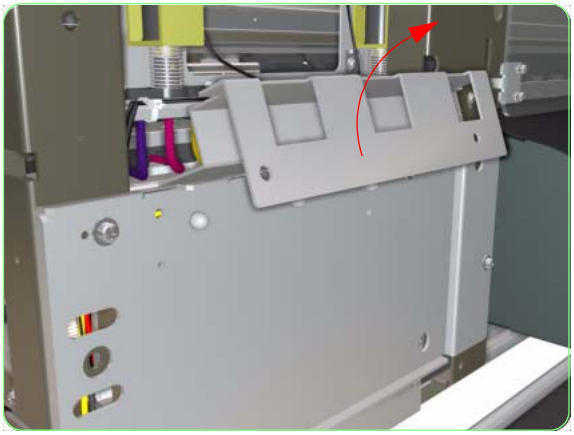
Once you have replaced the Prime Assembly, make sure you reset the Prime Assembly counter (for more information, refer to Page *4-80*).

Solenoid Assembly

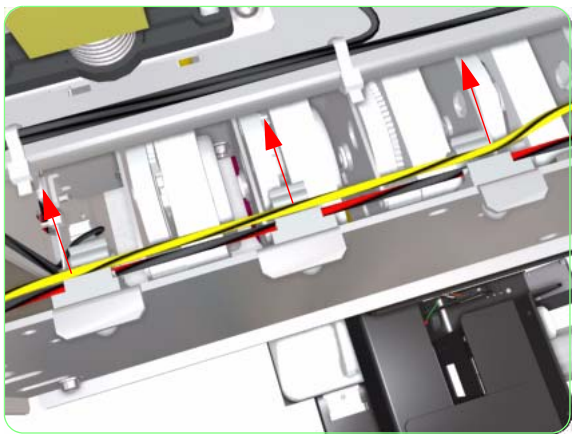
Removal

Switch off the product and remove the power cable.

1. Uncap the Carriage and move it to the Wiping Station.
2. Remove the Upper Side Cover (Right) ⇒ Page *8-4*.
3. Remove the Top Side Cover (Right) ⇒ Page *8-5*.
4. Remove the Lower Side Cover (Right) ⇒ Page *8-8*.
5. Remove the Lower Capping Cover ⇒ Page *8-13*.
6. Remove the Capping Door ⇒ Page *8-15*.
7. Remove two screws that secure the metal bracket to the chassis (on the Capping Side).

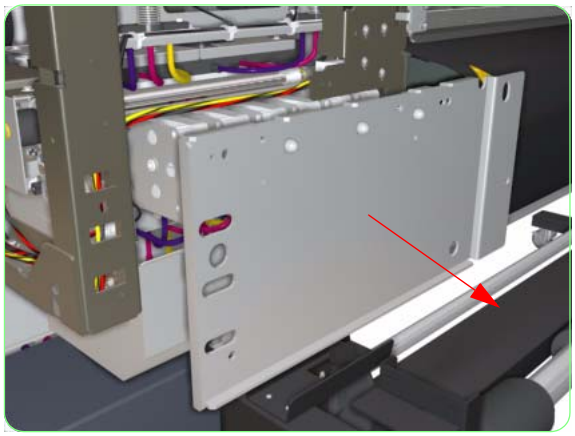


8. Remove the metal bracket from the Printer.

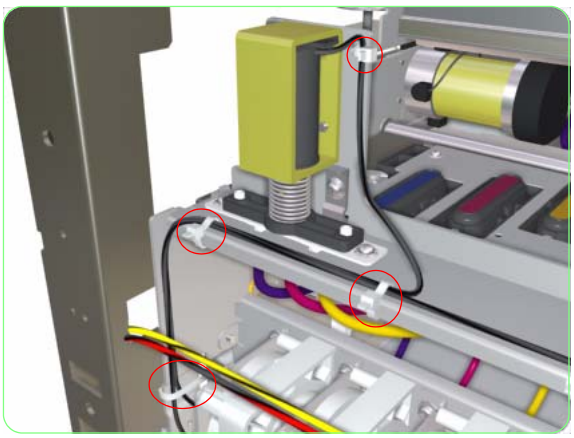


9. Release ALL the cables from the cable clips.

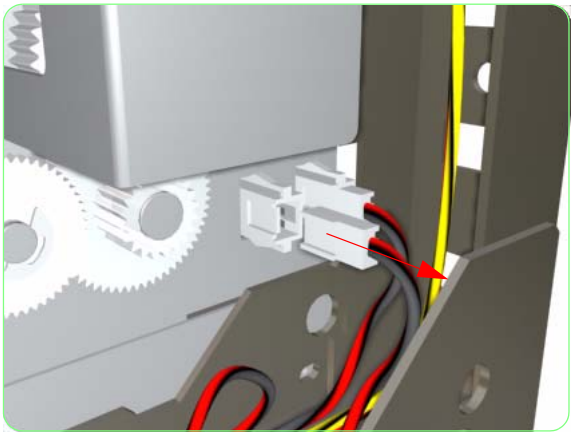
10. Remove four screws that secure the metal plate to the chassis.



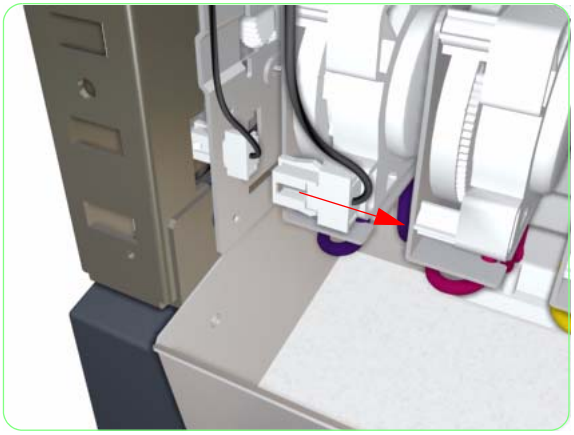
11. Remove the metal plate from the chassis.



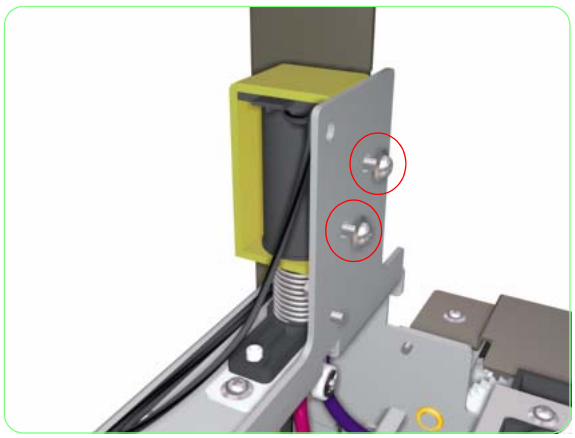
12. Cut the cable ties that secure the Solenoid Assembly cable.



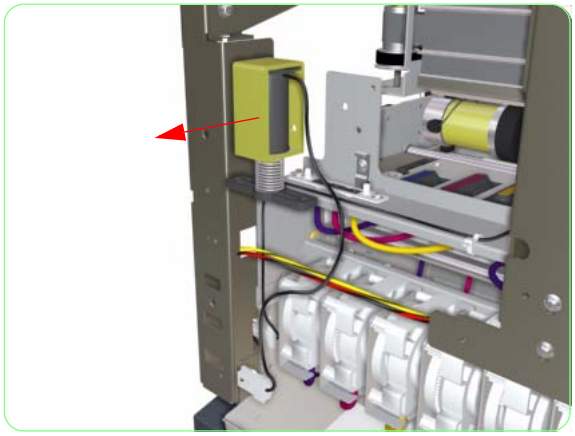
13. Disconnect the Solenoid Assembly cable.



14. Release the Solenoid Assembly cable connector from the chassis.



15. Remove two screws that secure the Solenoid Assembly to the Capping Station.



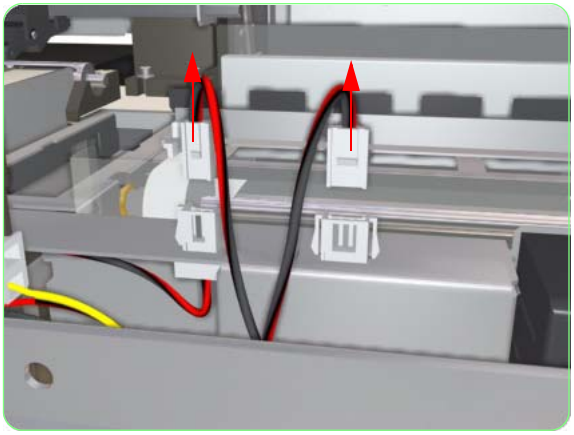
16. Remove the Solenoid Assembly from the Capping Station.

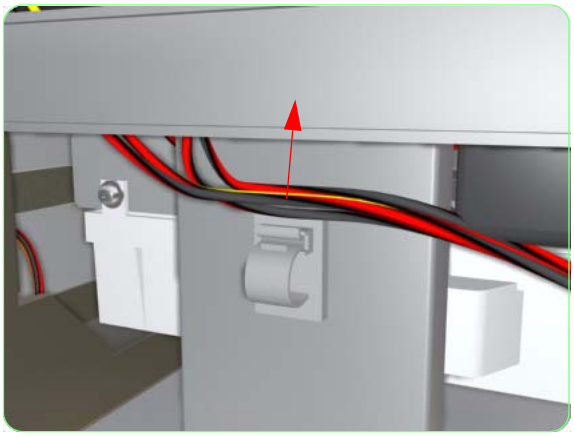
Wiping Station Assembly

Removal

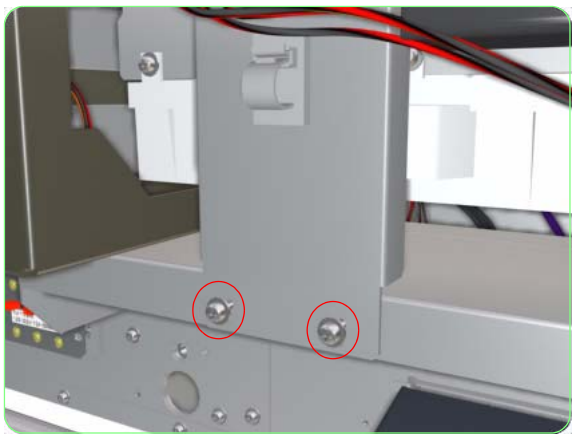
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Left) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Left) ⇒ Page *8-5*.
3. Remove the Lower Side Cover (Left) ⇒ Page *8-8*.
4. Remove the Lower Wiping Cover ⇒ Page *8-16*.
5. Remove the Wiping Door ⇒ Page *8-18*.
6. Disconnect the Wiping Station cables.

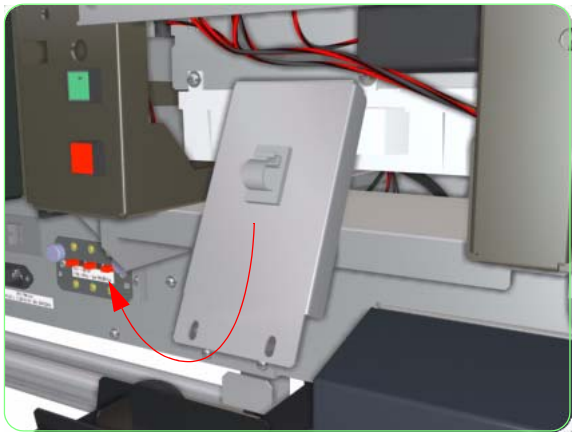




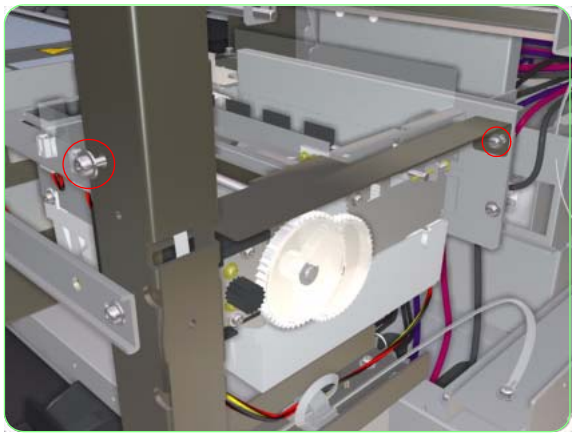
7. Release the Wiping Station cables from the cable clip.



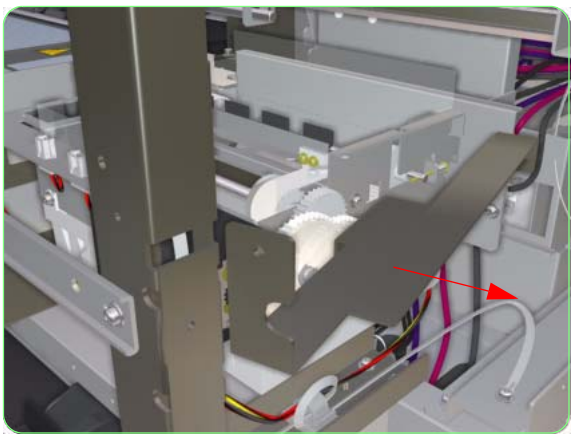
8. Remove two screws that secure the metal bracket to the Wiping Station.



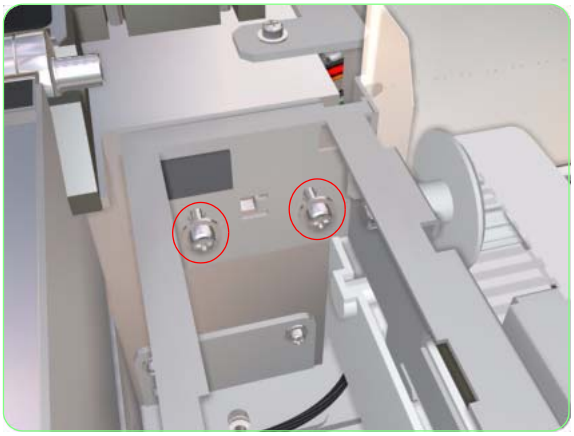
9. Remove the metal bracket from the Wiping Station.



10. Remove two screws that secure the Gear Cover to the Wiping Station.

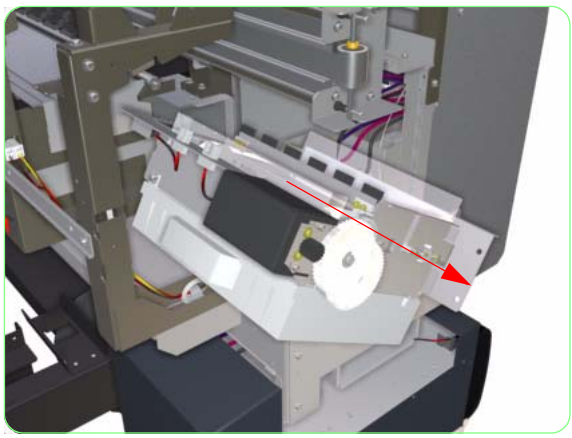


11. Remove the Gear Cover from the Wiping Station.



12. Remove two screws that secure the Wiping Station to the chassis.

13. Remove one screw that secures the Wiping Station to the chassis.



14. Remove the Wiping Station from the Printer.

Once the Wiping Station Assembly has been installed correctly, you must perform the Wiping Station Height Adjustment. For further information, refer to Page *5-13*.

Once you have replaced the Wiping Station Assembly, make sure you reset the following counters:

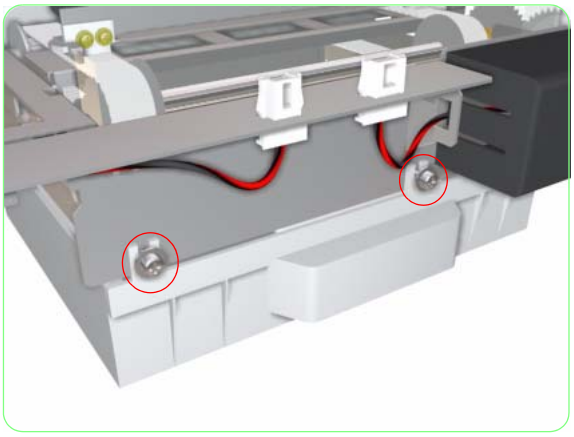
- **Wiper Cleaning ⇒ Page 4-81.**
- **Wiper Belt ⇒ Page 4-82.**
- **Wiper Blade ⇒ Page 4-83.**

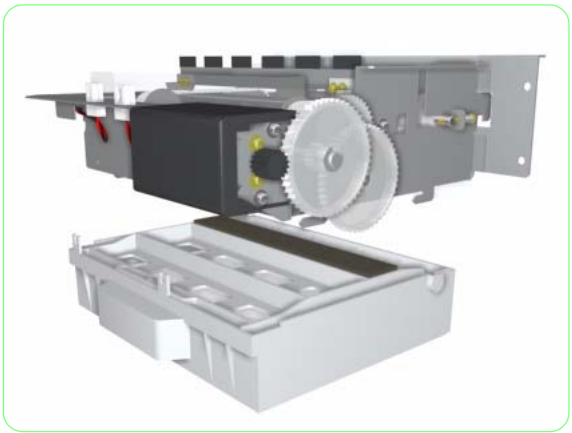
Wiper Cleaning Assembly

Removal

Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Left) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Left) ⇒ Page *8-5*.
3. Remove the Lower Side Cover (Left) ⇒ Page *8-8*.
4. Remove the Lower Wiping Cover ⇒ Page *8-16*.
5. Remove the Wiping Door ⇒ Page *8-18*.
6. Remove the Wiping Station Assembly ⇒ Page *8-129*.
7. Remove two screws from both sides that secure the Wiper Cleaning Assembly to the Wiping Station Assembly.





8. Unclip the Wiper Cleaning Assembly from the Wiping Station Assembly.

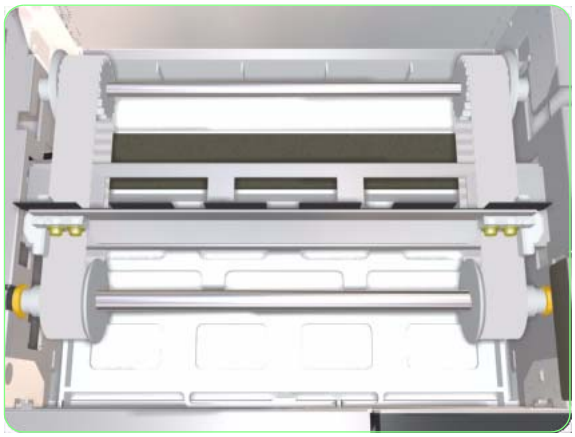
Once you have replaced the Wiper Cleaning Assembly, make sure you reset the Wiper Cleaning counter (for more information, refer to Page 4-81).

Wiper Blade

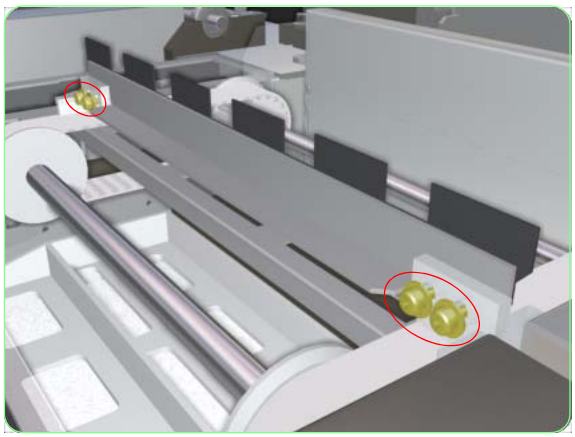
Removal

Switch off the product and remove the power cable.

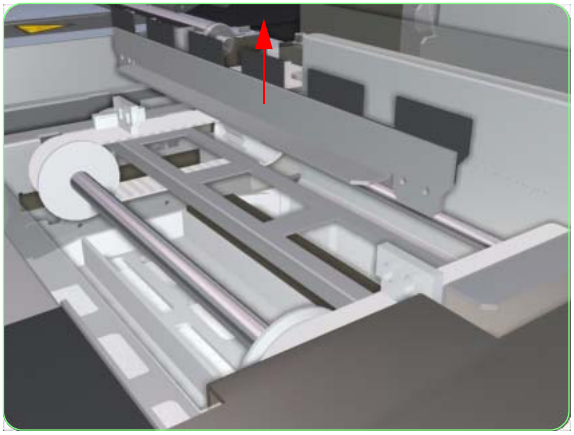
1. Open the Wiping Door.



2. Manually turn the Wiper Gear so that the Wiper Blade moves to upper position.



3. Remove four screws that secure the Wiper Blade to the Wiper Belts.



4. Remove the Wiper Blade from the Wiper Belts.

Once the Wiper Blade has been installed correctly, you must perform the Wiper Blade Height Adjustment. For further information, refer to Page *5-17*.

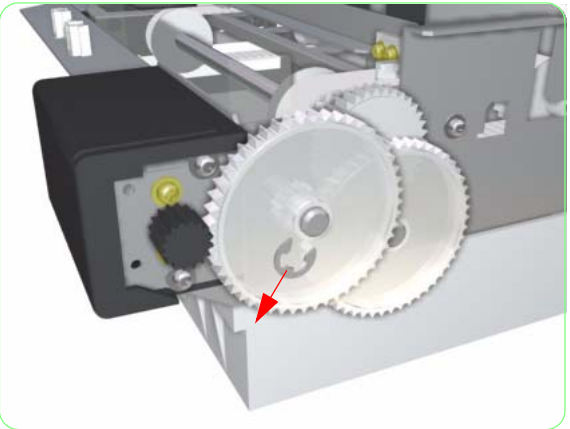
Once you have replaced the Wiper Blade, make sure you reset the Wiper Blade counter (for more information, refer to Page *4-83*).

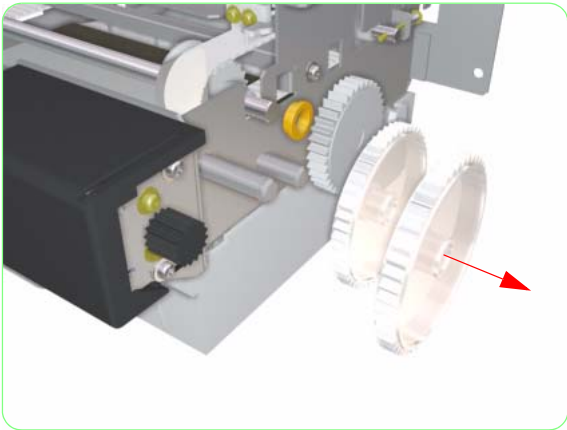
Wiper Belts

Removal

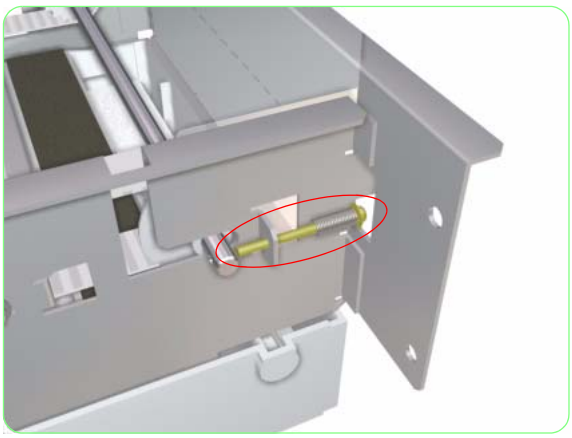
Switch off the product and remove the power cable.

1. Remove the Upper Side Cover (Left) ⇒ Page *8-4*.
2. Remove the Top Side Cover (Left) ⇒ Page *8-5*.
3. Remove the Lower Side Cover (Left) ⇒ Page *8-8*.
4. Remove the Lower Wiping Cover ⇒ Page *8-16*.
5. Remove the Wiping Door ⇒ Page *8-18*.
6. Remove the Wiping Station Assembly ⇒ Page *8-129*.
7. Remove the C ring that secures the Gears.

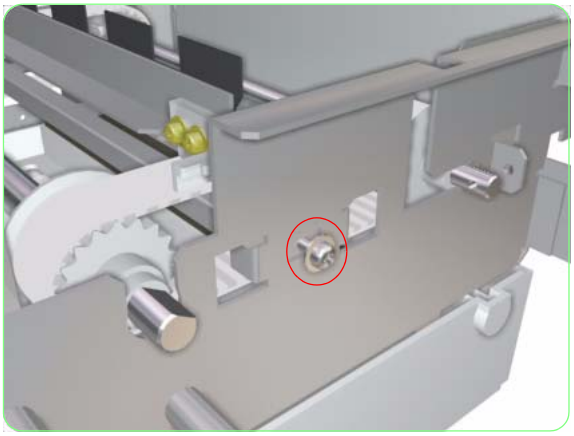




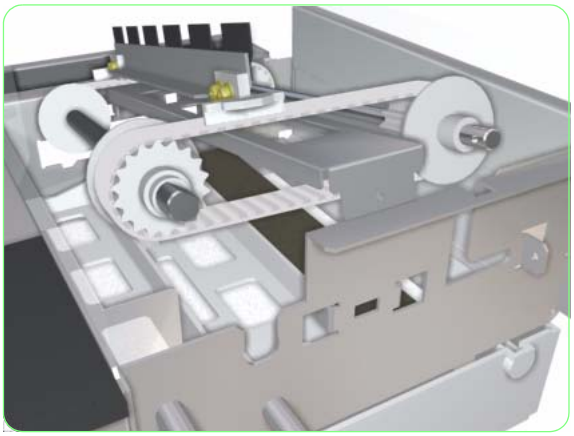
8. Remove the Gears from the Wiping Station.



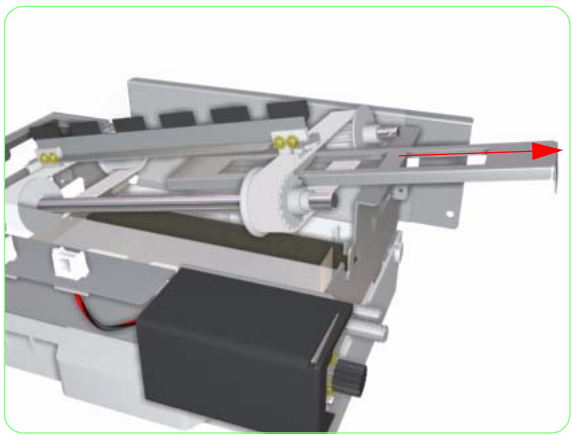
9. Remove the screw and spring from each side of the Wiping Station.



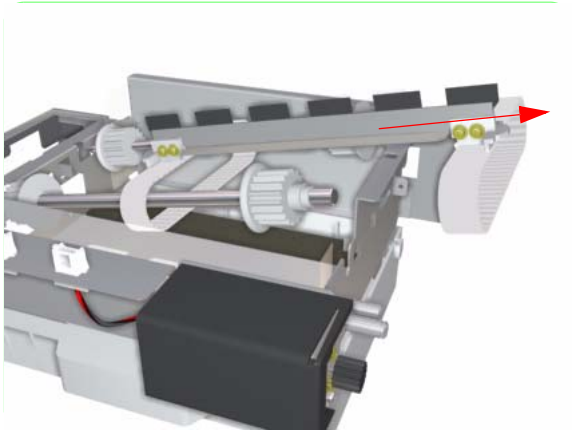
10. Remove one screw that secures the metal plate.



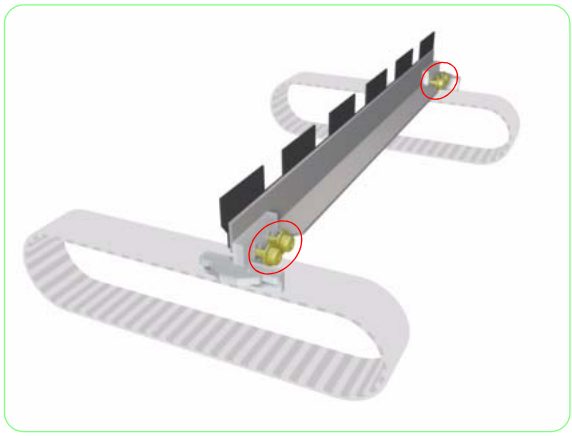
11. Lift up the Wiping System.



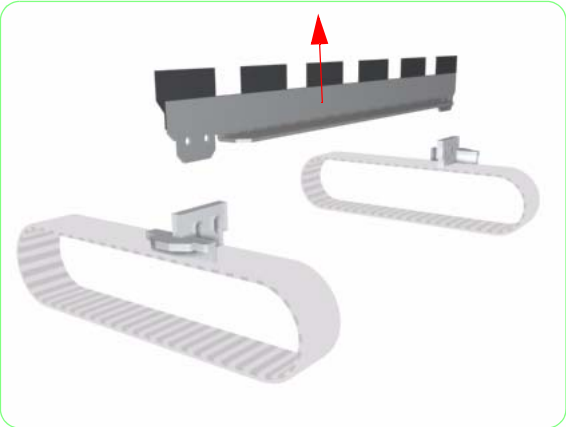
12. Remove the metal plate from the Wiping Station.



13. Remove the Wiper Blade and belts from the Wiping Station.



14. Remove four screws that secure the Wiper Blade to the Wiper Belts.



15. Remove the Wiper Blade from the Wiper Belts.

Once the Wiper Belts and Blade have been installed correctly, you must perform the Wiper Belt Tension Adjustment (refer to Page *5-16*) and the Wiper Blade Height Adjustment (refer to Page *5-17*).

Also, Once the Wiping Station Assembly has been installed correctly, you must perform the Wiping Station Height Adjustment. For further information, refer to Page *5-13*.

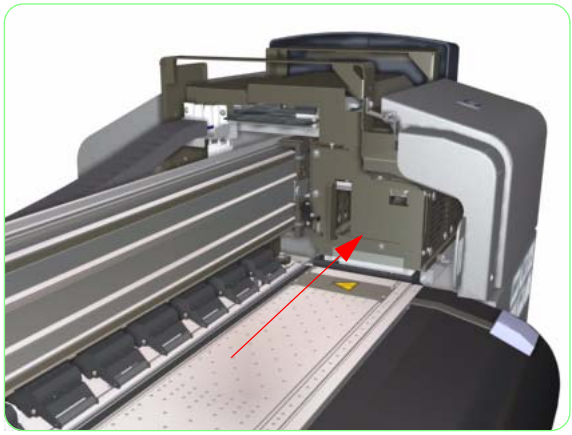
Once you have replaced the Wiper Belts, make sure you reset the Wiper Belt counter (for more information, refer to Page *4-82*).

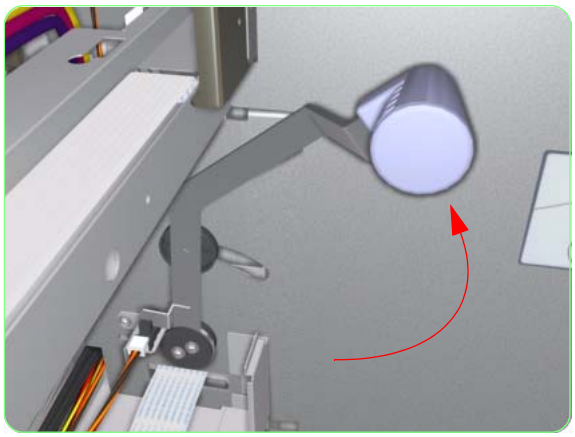
Pinchwheel Assembly

Removal

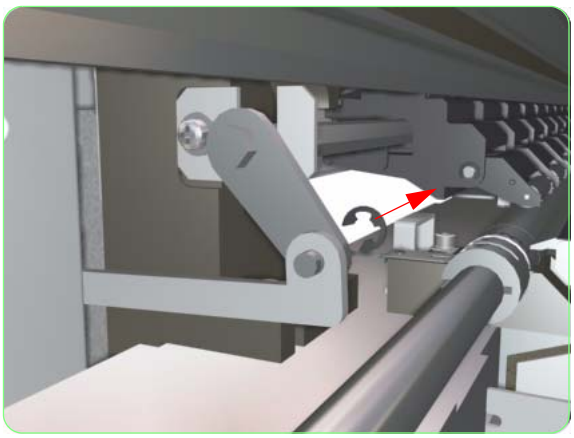
Switch off the product and remove the power cable.

1. Remove the Rear Cover ⇒ Page *8-3*.
2. Remove the Upper Side Cover (Left and Right) ⇒ Page *8-4*.
3. Remove the Top Side Cover (left and Right) ⇒ Page *8-5*.
4. Remove the Top Cover ⇒ Page *8-6*.
5. Remove the Front Heater ⇒ Page *8-29*.
6. Remove the Paper-Axis Motor ⇒ Page *8-66*.
7. Uncap the Carriage and move it to the Wiping Station.

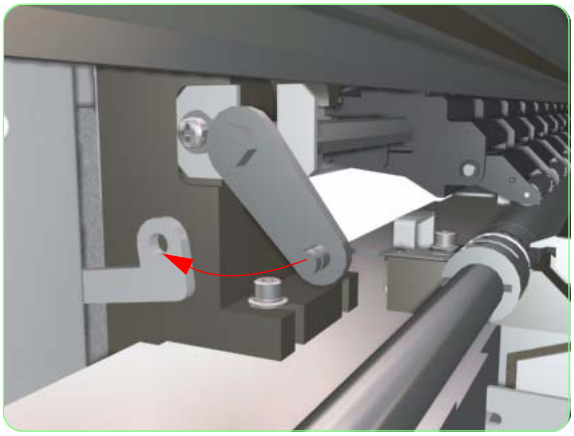




8. Raise the Media Lever.



9. Remove the C ring that secures the Linkage to the Pinchwheel Cam.

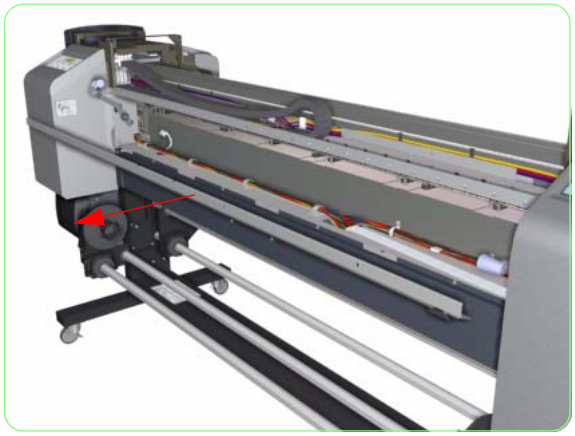


10. Release the Linkage from the Pinchwheel Cam.

11. Pull out the Pinchwheel Cam until the Pinchwheel Assembly that you want to remove can be accessed.

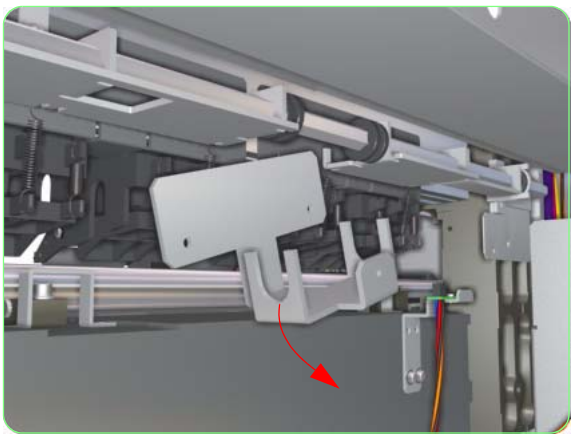
It is NOT necessary to remove the Pinchwheel Cam completely.

12. Remove four screws that secure the Metal Cover.

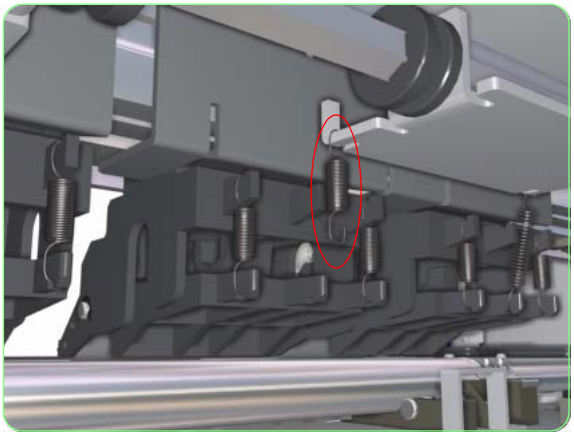


13. Remove the Metal Cover from the Printer.

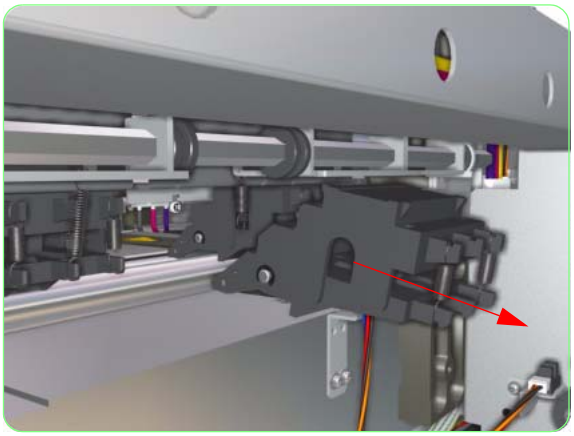
14. Remove two/three screws that secure the Pinchwheel Bracket (that secures the Pinchwheel Assembly that you want to remove).



15. Remove the Pinchwheel Bracket from the Printer.



16. Release the middle spring from the Pinchwheel Assembly.



17. Remove the Pinchwheel Assembly from the Printer.

Preventive Maintenance

9

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Preventive Maintenance

In order to keep the Printer in an optimal condition, it is recommended to perform routine maintenance. This Chapter explains the necessary procedures to be performed on a daily, weekly or monthly basis.

A Printer Maintenance Guide is supplied with the Printer which the customer must follow. The information in this Chapter is to be used as a reference for the Service Engineers in the case that the Printer Maintenance Guide is not available.

Printheads Maintenance

In order to ensure Image Quality, the Printheads in the Printer must be maintained on a frequent basis. If the Printheads are not looked after correctly, it is possible to get clogged or misdirected nozzles due to dried ink which can cause banding. If the Printhead cannot be recovered, it means the replacement of the Printhead which can be very expensive.

In order to prevent the Printhead from malfunctioning, the customer has the responsibility to:

1. Perform daily maintenance of the Printheads.

   The daily maintenance is necessary to:

   - Clean any dried ink that remains on the Capping or Wiping systems.
   - Keep the Wiping system wet so that it can efficiently clean the Printhead's nozzle plate.

2. Don't switch Off the Printer.

   The Printer has an internal clock which allows to automatically perform a fill cap operation, flushing some ink through the Printhead, which keeps the Printheads in good condition. This is done after the first 20 hours without printing and every 3 days.

   If the Printer is switched Off for a long period, this process does not happen. If the ink does not flow through the Printheads from time to time, the ink will dry inside the nozzles, reaching a point where it is impossible to recover them and the Printhead will fail. This will mean an expensive Printhead replacement.

   If the Printer must be switched Off for a long period of time, the customer must use either an Ink System Storage Kit to store (and protect) the Printheads or an Ink System Cleaning kit to recover the Printheads.

Tips and Tricks

- If the Printer will not be maintained for a couple of days (i.e. weekends), make sure that the customer performs the daily maintenance before switching Off the Printer.
- If a customer has not been able to perform the daily maintenance for more than one week, ask them to fill up the Wiper Sponge with Wiper Liquid, using a full syringe for each day the Printer has not been used. Also advise the customer to perform a Printhead Recovery, using a "Strong" level.

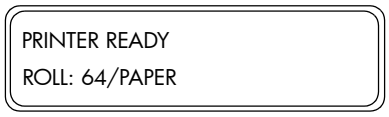
Daily Inspection and Maintenance

The following procedures should be performed on a daily basis in order to ensure acceptable print quality:

- Wiper Blade Cleaning.
- Moistening the Wiper Sponge.
- Capping Unit Cleaning.
- Waste Ink Bottle Disposal.
- Test Print.
- Normal Printhead Recovery (Only if Printheads require cleaning).

Wiper Blade Cleaning

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.



2 When the following screen is displayed on the Front Panel, press the **Shift** key once.

3 When the following screen is displayed on the Front Panel, press the ▲ key to enter into the PH Main Menu.

4 In the PH Main submenu, scroll to "Wiper Cleaning" and press the **OK** key.

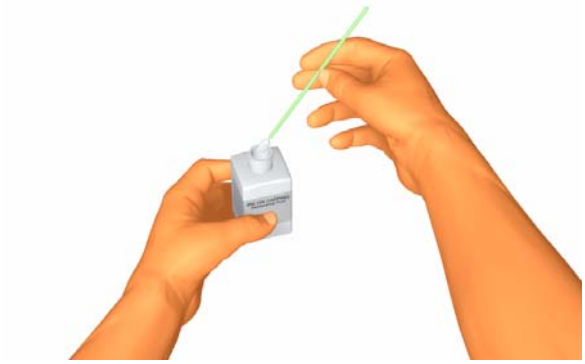
5 You will need to confirm that you want to perform the Wiper Cleaning procedure by pressing the **OK** key.

6 The Wiper Blade will automatically come up for cleaning during which the following message will be displayed on the Front Panel.

7 When the following message is displayed on the Front Panel, open the Rear Cover and the Wiping Door.

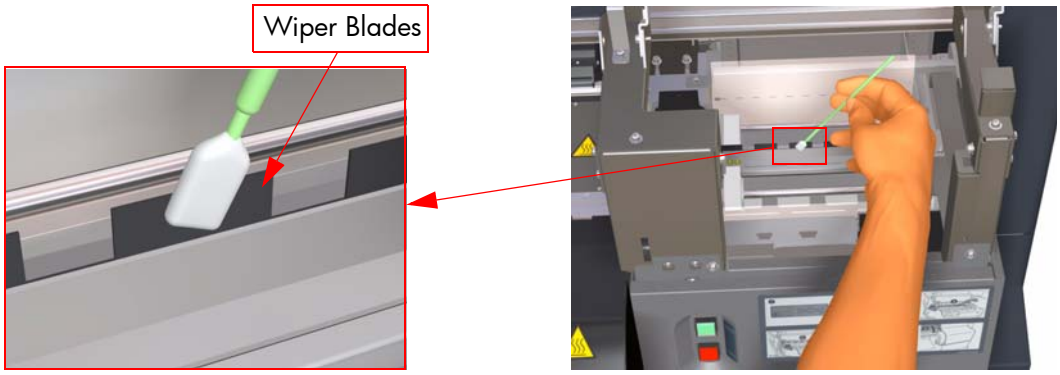
8 Make sure that there is no dried ink stuck on the Wiper Blade. Also make sure that the Wiper Blade is not damaged.

9 Dip a **new** cleaning swab into the Wiper Cleaning Liquid.



Make sure that you use the Wiping Cleaning Liquid and NOT the Cap Cleaning Liquid to clean the Wiper Blade. The Cap Cleaning Liquid is not strong enough to clean the Wiper Blade properly and could cause damage to the Printheads.

10 Use the cleaning swab to clean the front and back parts of the Wiper Blade.



Make sure that the Wiper Cleaning Liquid does not drip on to other parts of the Printer. If the Wiper Cleaning Liquid drips on to the Belt or any nearby Sensors, this could cause serious damage to the Printer.

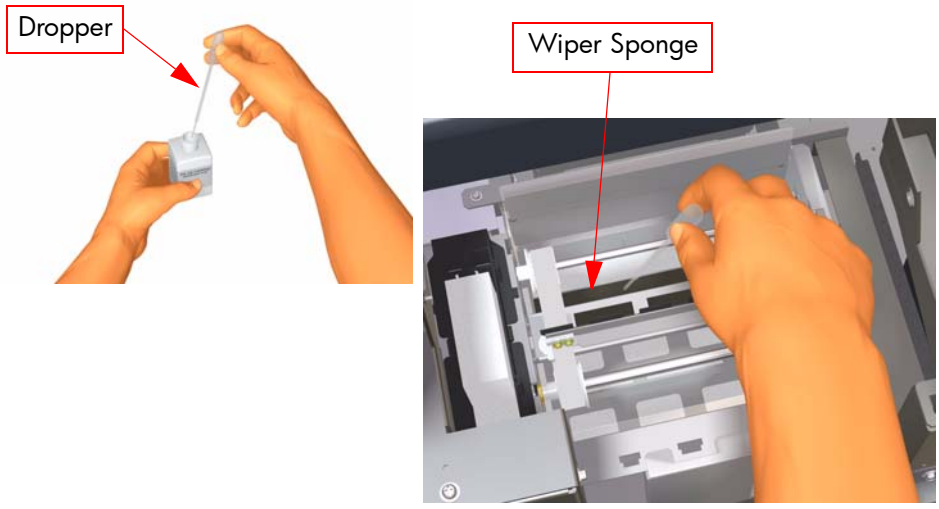
11 After the Wiping Blades have been thoroughly cleaned, close the Wiping Door and the Rear Cover to automatically return the Wiping Blades to their original position.

Moistening the Wiper Sponge

The Wiper Sponge has to always be moist so that the Wiper Blade can correctly clean the Printheads. The following should be done on a daily basis:

1 Before printing, check if the Wiper Sponge is moist by pressing a dry swab down on the sponge.

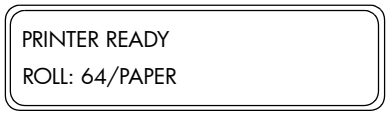
2 If the Wiper Sponge is dry, apply a few drops of the Wiper Cleaning Liquid on to the Wiper Sponge using the Dropper.



Make sure that the Wiper Cleaning Liquid does not drip on to other parts of the Printer. If the Wiper Cleaning Liquid drips on to the Belt or any nearby Sensors, this could cause serious damage to the Printer.

Capping Unit Cleaning

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.



2 When the following screen is displayed on the Front Panel, press the **Shift** key once.

3 When the following screen is displayed on the Front Panel, press the ▲ key to enter into the PH Main Menu.

4 In the PH Main submenu, scroll to "Cap Cleaning" and press the **OK** key.

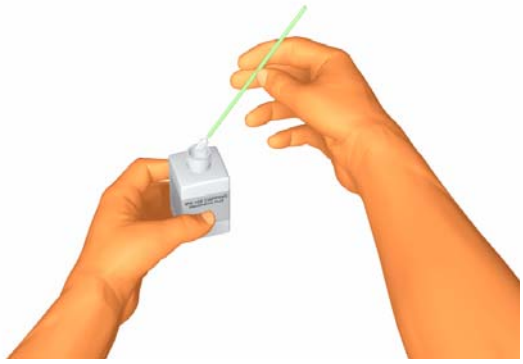
5 You will need to confirm that you want to perform the Cap Cleaning procedure by pressing the **OK** key.

6 The Carriage will automatically move to the wiping side of the Printer so that the Capping Unit can easily be accessed, during which the following message will be displayed on the Front Panel.

Once the Carriage is out of the Capping Station, the cleaning procedure should be done as quickly as possible so as not to permanently damage the Printheads. The Printer will emit an acoustic warning (beeps) while the Carriage is out of the Capping Station.

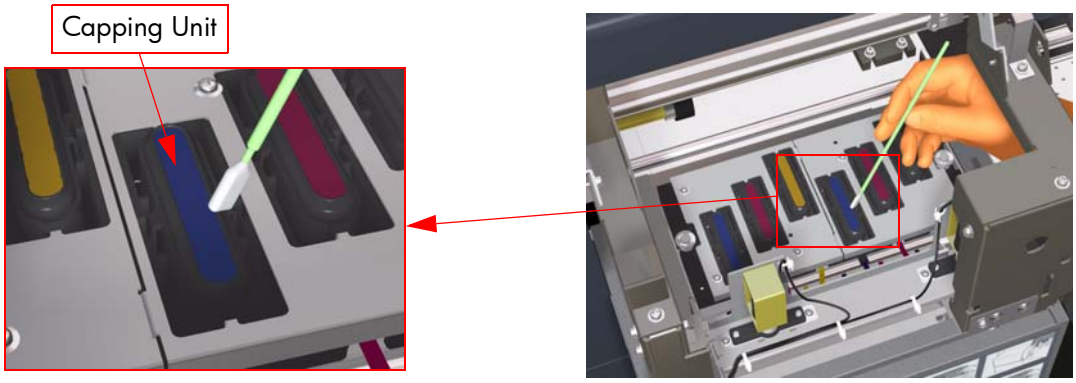
7 When the following message is displayed on the Front Panel, open the Rear Cover and the Capping Door.

8 Dip a **new** cleaning swab into the Cap Cleaning Liquid.



Make sure that you use the Cap Cleaning Liquid and NOT the Wiper Cleaning Liquid to clean the Capping Unit, otherwise you could cause damage to the Printheads.

9 Use the cleaning swab to clean the edges and the upper surfaces of ALL six Capping Units.



Make sure that the Cap Cleaning Liquid does not drip on to other parts of the Printer. If the Cap Cleaning Liquid drips on to the Belt or any nearby Sensors, this could cause serious damage to the Printer.

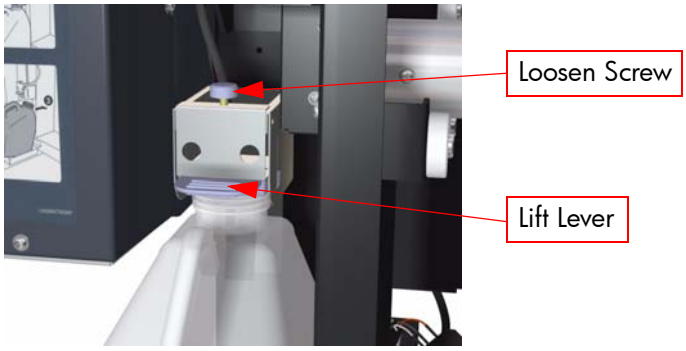
10 After the Capping Unit has been thoroughly cleaned, close the Capping Door and the Rear Cover to automatically return the Carriage to it's home position.

Waste Ink Bottle Disposal

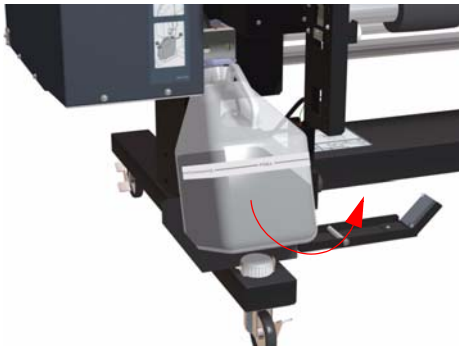
The Waste Ink Bottle should be checked on a daily basis to make sure that it is not full. The Waste Ink Bottle should be emptied as follows:

It is the customer that has the responsibility to dispose of the Waste Ink whenever necessary. The ink should be disposed as industrial waste. Please refer to the Printer User's Guide for complete information (including safety notes) on waste handling and disposal instructions.

1 Loosen the screw and lift up the lever to release the Waste Ink Bottle.

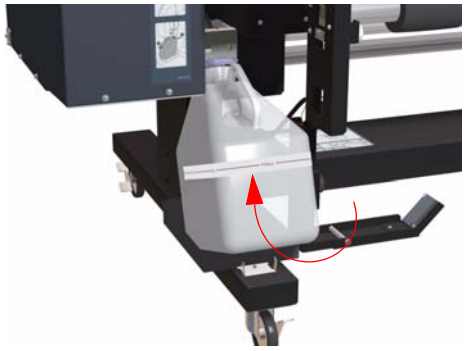


2 Carefully pull out the Waste Ink Bottle, taking care not to spill any on the Printer or on the floor.

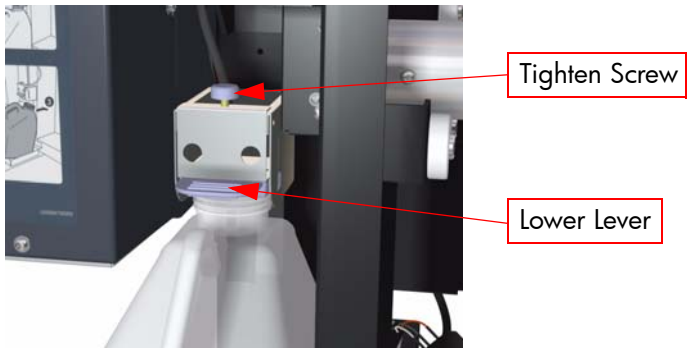


3 Securely screw on the top on the full Waste Ink Bottle and store in a safe place until it can be taken for disposal.

4 Install a **new** Waste Ink Bottle into position.



5 Lower the lever and tighten the screw, making sure that the Waste Ink Bottle is securely in position.



6 Once the Waste Ink Bottle is correctly installed, the Front Panel will request you to reset the Waste Counter.

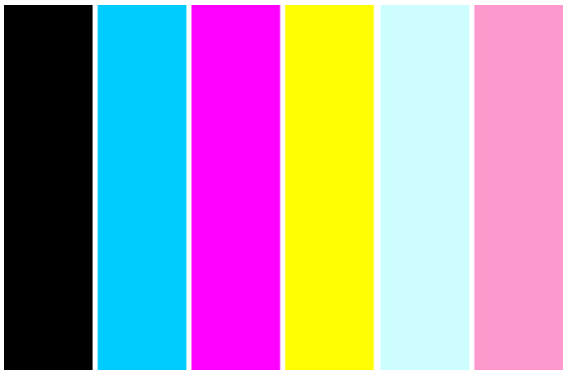
```
# BOTTLE EMPTY
* NO
```

7 Select "Yes" and press the **OK** key to reset the Waste Counter by indicating that the Waste Bottle is empty.

```
# BOTTLE EMPTY
* YES
```

IQ Print

The IQ Print can be used to check for Print Quality problems (like banding) and can be used to isolate the root cause of the problem.



1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

PRINTER READY
ROLL: 64/PAPER

2 When the following screen is displayed on the Front Panel, press the **Shift** key twice.

▲INK	MEDIA REG▼
◀MEDIA	M.ADV▶

3 When the following screen is displayed on the Front Panel, press the ◀ key to enter into the Adjust Menu.

▲PRINTER	SETUP▼
◀ADJUST	

4 In the Adjust submenu, scroll to "Test Prints" and press the **OK** key.

TEST PRINTS
> IQ PRINT

5 In the Test Prints submenu, scroll to "IQ Print" and press the **OK** key.

TEST PRINTS
* IQ PRINT

6 You will need to confirm that you want to print the IQ Print by pressing the **OK** key.

TEST PRINTS
* IQ PRINT OK?

7 The Printer will start to print the IQ Print and the following message will appear on the Front Panel.

```
# TEST PRINTS
* EXECUTING
```

8 The IQ Print can be cancelled at any time by pressing the **Cancel** key.

```
# TEST PRINTS
* CANCELING
```

If problems are found in the IQ Print, try the following:

- If the problem detected is banding in one or several colors, it is recommended to perform the Printhead Recovery procedure.
- If the problem detected is banding across ALL the colors, it is recommended to perform the Media Advance adjustment on the media that is currently being used ⇒ Refer to the User's Guide.
- For further information regarding Print Quality problems, please refer to Chapter 6 - Print Quality.

Normal Printhead Recovery

Printhead Recovery should be performed only if a Print Quality defect has been found in the IQ Print. Otherwise, Printhead Recovery should only be performed once a month.

1 When the "Printer Ready" message appears on the Front Panel, press the **Online** key to take the Printer offline.

```
PRINTER READY
ROLL: 64/PAPER
```

2 When the following screen is displayed on the Front Panel, press the **Shift** key once.

```
▲INK              MEDIA REG▼
◀MEDIA              M.ADV▶
```

3 When the following screen is displayed on the Front Panel, press the ◀ key to enter into the PH Recovery Menu.

```
▲PH. MAIN           FEED▼
◀PH RECOVERY            ▶
```

4 In the PH Recovery submenu, press the **OK** key.

```
# PH RECOVERY
> NORMAL ALL
```

5 In the PH Recovery submenu, select the level of recovery you would like and then press the **OK** key.

```
# PH RECOVERY
* NORMAL ALL
```

Recommended cleaning level is NORMAL

The different levels of Printhead Recovery are as follows:

- Normal All - Activates a normal recovery for all Printheads.
- Strong All - Activates a strong recovery for all colors.
- Strong K, Lm, Lc - Activates a strong recovery for the Black, Light Magenta and Light Cyan Printheads.
- Strong Y, M, C - Activates a strong recovery for the Yellow, Magenta and Cyan Printheads.

6 You will need to confirm that you want to perform the selected Printhead Recovery procedure by pressing the **OK** key.

```
# PH RECOVERY
* OK?
```

7 When the following message appears on the Front Panel, check whether the Waste Ink Bottle is present and is NOT full. Press the **OK** key once the Waste Ink Bottle has been checked.

```
# PH RECOVERY
* BOTTLE OK?
```

8 The Carriage will begin to perform the recovery process by pumping ink through the Printheads and performing the wiping procedure in order to unblock any nozzles that could be blocked. During the recovery process, the following message will be displayed on the Front Panel.

```
# PH RECOVERY
* EXECUTING          XXX
```

9 Once the recovery process has finished, the Front Panel will return to the following screen.

```
# PH RECOVERY
> NORMAL ALL
```

When Leaving the Printer Off for more than 2 weeks

It is important to remember that the Printer should not be switched Off so that the Printer can automatically trigger the internal Printhead maintenance procedures to prevent the Printheads from failing.

But there might be certain circumstances where the Printer needs to be switched Off for a long period of time. In order to do this, the customer must follow the storage procedure using the HP 790 Ink System Storage Kit together with the internal storage option. This procedure replaces the ink from the Ink System with a lower solvent liquid which will maintain the health of the Printheads, preventing them from failing.

Before leaving the printer switched Off for more than 2 weeks, perform the Store Ink System procedure ⇒ Page *4-27*.

In order to perform the Service Clean procedure, you will need the HP 790 Ink System Storage Kit (part number CB297A). This kit includes:

- Six Ink System Purging Cartridges.
- Six Ink System Storage Liquid Cartridges.

If the Printer is switched On after leaving it switched Off for more than one month (31 days), Error Code 11E0 will be displayed on the Front Panel.

When Returning to the Printer after more than 2 weeks

When returning to the Printer, a Printhead recovery procedure will need to be done using the Ink System Cleaning Kit together with the Printhead Wash option to clean the Ink System from the maintenance liquid. Once the Ink System is cleaned, the Ink Charge option is used to refill the Ink System with regular ink.

After returning to the Printer after leaving it switched Off for more than 2 weeks, perform the following:

- Daily Maintenance ⇒ Page *9-3*.
- Clean Ink System ⇒ Page *4-33*.
- Charge Ink ⇒ Page *4-23*.

In order to perform the Clean Ink System procedure, you will need the HP 790 Ink System Cleaning Kit (part number CB296A). This kit includes:

- Six Ink System Purging Cartridges.
- Six Ink System Cleaning Liquid Cartridges.

If the Printer is Switched Off for less than 2 weeks

If a customer accidently leaves the Printer switched Off for less than 2 weeks, they will be able to recover the Printheads if the nozzles have been blocked with dried ink. The success of recovering the Printheads will depend on how long the Printer has been left switched Off. If the Printer has been switched Off for longer than 2 weeks, it could mean the replacement of some or ALL of the Printheads.

After returning to the Printer after leaving it switched Off for less than 2 weeks, perform the following:

- Daily Maintenance ⇒ Page *9-3*.
- Clean Ink System ⇒ Page *4-33*.
- Charge Ink ⇒ Page *4-23*.

In order to perform the Clean Ink System procedure, you will need the HP 790 Ink System Cleaning Kit (part number CB296A). This kit includes:

- Six Ink System Purging Cartridges.
- Six Ink System Cleaning Liquid Cartridges.

If the Printer is Switched Off for more than one Month

If the Printer is switched On after leaving it switched Off for more than one month (31 days), Error Code 11E0 will be displayed on the Front Panel. In order to clear this Error Code, perform the following:

1. Turn the Printer ON in error skip mode by holding down the **Cancel** and **Shift** keys and pressing the ON button.
2. When the following screen is displayed on the Front Panel, you will be requested to enter a password. Press the following keys in this order: ◀, ▶, **Shift** and **OK**.

   MAINTENANCE MODE
   PASSWORD?

3. Switch the Printer OFF and then ON again.

About this Edition

This is the 1st edition of this Service Manual

1st edition, titled
HP Designjet 9000s Series Printers Service Manual (Model Q6665A) - March 2006

What's in this Service Manual

This manual contains information necessary to test, calibrate and service:

- HP Designjet 9000s Series Printers (Model Q6665A).

For information about using these printers, refer to the corresponding User and Quick Reference Guides.

The procedures described in this manual are to be performed by HP-qualified Service Personnel only.